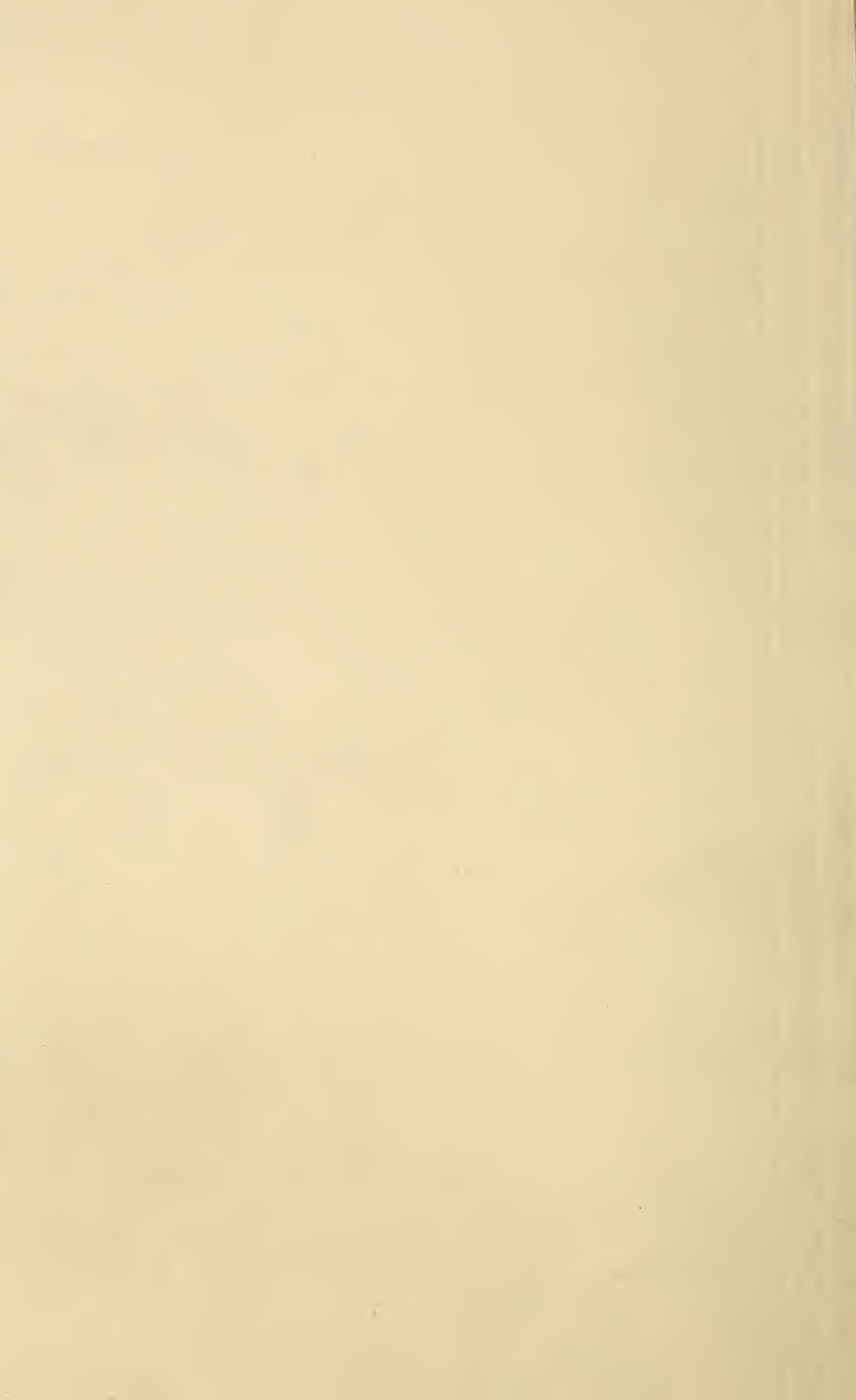


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A JOURNAL DEVOTED
 TO BEES
 AND HONEY
 AND HOME
 INTERESTS.

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No. 18.



HORSE RADISH leaves crushed are among the latest remedies for bee-stings.

I'M EXCEEDINGLY THANKFUL to say that, although the harvest was a failure, the bees are filling up nicely for winter—on cucumber, I think.

AS PROOF that bees need fresh air, M. Gubler cites in *Revue* the fact that bees begin brood-rearing near the entrance, where fresh air is plentiful.

BEE-GLOVES of cotton, double, are advertised in *Revue Internationale*. Perhaps the same end would be gained by having a pair of cotton gloves to fit, then a larger pair over.

A WRITER in *L'Apiculteur* has seen bees passing freely from one kind of flower to another while gathering only honey, but when gathering pollen they adhere strictly to the one kind.

IN *Centralblatt*, mention is made of the manufacture, on a large scale, of a mixture under the name of "table honey," consisting of honey and sugar of a certain kind. The writer thinks bee-keepers should have a friendly feeling toward the product!

THE OBJECTION that Dr. Hurst makes to the fence, p. 659, might be overcome by having thinner wedges and wedging on both sides. By the way, isn't it easier to slide the wedges in and out with the fence than with the old way? Less friction to overcome.

A SAMPLE of dark-colored honey sent to the *British Bee Journal* was pronounced from crimson clover. Is crimson-clover honey always dark? [While the honey from crimson clover is darker than that from white, I shall be almost inclined to believe that our usually accurate cotemporary is in error.—ED.]

AT A MEETING of the Northern Illinois B. K. A., "What good can we expect by joining the Bee-keepers' Union?" was one of the questions discussed. "As a result of the discussion, eight became members." If the matter were similarly brought up in every bee-

keepers' meeting, the Union would have quite a boom.

YES, IT MUST BE that locality makes a difference as to bees bulging over the edges of separators. There's Aikin's honey, p. 652, bulging with the separator $\frac{1}{4}$ inch below top of section, while on p. 657 Doolittle's experience of 25 years shows the honey all right with the separator $\frac{1}{8}$ inch lower than Aikin's. Then there's E. W. Brown, p. 654, with fences $\frac{1}{4}$ below top of section, and no bulging with plain sections.

THE DEEP INDENTATIONS in those queen-cells, p. 647, promise good queens. Wouldn't their looks be helped a trifle if the cells were not quite so sharp-pointed? [I do not know. I am inclined to think, however, that the fact of whether they are pointed or rounding is due to the peculiarity of the bees building the cells. If I mistake not, one colony may build pointed cells and another colony rounded ones.—ED.]

BEE-VEILS of horse hair are among the things used in Europe. Can any one tell us as to their durability and desirability? [Such veils might be strong, but they would be too coarse to see through readily. I much prefer a veil with a facing of silk brussels netting—a veil that will wear out in a season, or less than a season, than to have a strong durable affair that is both hot, and difficult to see through.—ED.]

CLOSER ATTENTION shows there are more exceptions than I had supposed as to bees using the side for entrance when the hive is raised on blocks. But the rule is that the front is the entrance used; and the only harm that comes from the exceptions is that, when the hive is let down, it bothers the bees. [This goes to prove my old assertion, that the bees never do any thing *invariably* in their work in and about the hive.—ED.]

YOU SAY, p. 656, you can have the bottom edge of the fence so adjusted as to be queen-excluding. I doubt it. Takes too nice work. Some of the openings would let a queen through, and some would be too small for a worker. But does the queen go up often enough to make such a thing desirable? [The feat is not so difficult as you imagine, doctor. We have only to make the bottom of the su-

pers *practically* queen-excluding to make them almost *entirely* so. Still, I doubt whether the thing is worth seeking after. All work-er foundation and full sheets will accomplish almost as much, will it not, as queen-excluding honey-boards?—Ed.]

I WAS WELL AWARE, Mr. Editor, of the pleasure you take in making life a burden for me; but I didn't think you'd be so fiendishly vindictive as to do as you've done on p. 646, trying to set all the supply-dealers and inventors on me with samples of the "only ideal hive." No, I don't want any "ideal." I've settled on the eight-frame Dovetail, have some eighty already occupied, and will keep the old rotten things for supers at the close of the honey harvest, and for nadirs in spring.

CHICAGO has started a bee-keepers' association of its own, with quarterly meetings. There are 100 bee-keepers in the county, and they propose to fight adulteration. They've got a field for it, sure. Whoever blames Editor York for starting it (not adulteration, but the society) may not be far out of the way. [Do you mean, doctor, that Bro. York is to be blamed for starting the fight against adulteration, or that the editor of the *American Bee Journal* is the man who is at the bottom of the fight? I think I know what you mean, but I am not going to tell.—Ed.]

"DO BEES ever perform any work 'always' in the same way?" is your question, Mr. Editor, p. 645. Perhaps not; but I never knew any exception to the rule that, left to nature, a queen enlarges her brood-nest in the spring by laying eggs outside the cells already occupied. Did you? [Yes, I think I do. While it is a rule that queens will lay as you say, yet there are some freaky things that will do almost the very opposite. I still think you can not attach the word "always" to any thing that either the bees or the queens do in the domestic economy of the hive.—Ed.]

YOU OBJECT, Mr. Editor, to small starters and drone comb in sections on account of looks. Isn't there a more serious objection? Unless you have plenty of drone comb in the brood-chamber, the queen will too often go up and lay in the drone comb in the sections. If barred out by excluder, the bees don't understand that the queen can't get up, and will hold some of those drone-cells empty for the queen. I'm not guessing; I'm talking about what I've seen and know. [Your testimony on this point is backed up by that of hundreds, and I may say thousands, of others.—Ed.]

THE EDITOR of *Australian Bee Bulletin* says it was a woman he first saw throwing a stone over a limb to shake down a swarm, but he proposes to do better by keeping a supply of rockets on hand. [I am wondering what kind of women they have in Australia. I never saw a woman yet who could hit any thing she threw at—much less heave a stone, with a rope attached to it, over a high limb of a tree. I should be glad to show a picture of the woman who can perform such a feat; and if she or her husband will send me her photo I shall be glad to introduce her, with my very

best bow, to the fraternity of American bee-keepers.—Ed.]

AS SHOWING a marked difference in longevity of queens, D. W. Heise says, in *Canadian Bee Journal*, that out of 11 got from a United States breeder in 1896, six were superseded in 1897, while he has queens in their fourth year doing excellent service. But, friend Heise, don't you know that a queen's chances for long life are lessened when she has traveled and been introduced? [Does not this argue that more bee-keepers should raise their own queens? Doolittle's book tells all about how to raise the best queens in the world; and if it is a fact that transmission through the mails, and introducing, does cut down the longevity and perhaps the prolificness of queens, the practical honey-producer—the man who sees only bread and butter in the business—may well consider the matter. To promulgate such a doctrine will be rather bad on our own queen-rearing business; but if it is the truth, the truth must come out. Understand, I do not take the position positively that queens reared away from home, sent through the mails, and introduced, are shorter-lived than equally good queens reared at home. "Equally good queens." And this raises the question whether the man who makes a specialty of comb honey can also produce as fine a lot of queens as the one who makes a specialty of queen-rearing. All of these things deserve our thoughtful consideration, and the columns of GLEANINGS are open for the further discussion of the subject.—Ed.]



LARGE HIVES.

Size of Hive has Something to do with the Prolific-ness of Queen; Large Hive Defined; French Hives.

BY C. P. DADANT.

Friend Ernest:—After having received your request for a series of articles on large hives I read over the discussion between you and our Michigan friends, and will now give you our experience in the matter.

As I believe I said before in GLEANINGS, this subject is somewhat stale with us. We use large hives, as do all those who have tried them, because we do not see how we could keep bees in any thing smaller, and because our experience shows us, from experiments on a large scale, that they are preferable to small hives. But I must insist, in the beginning, that those who discuss the question, or the most of them, do not take the matter from the same standpoint that we do. Many who object to large hives take the ten-frame Langstroth brood-chamber as their standard for a large hive, as compared with the eight-frame,

which they consider the proper size. With us the ten-frame Langstroth hive is a small one; in fact, it is the smallest hive that we have ever tried here; and the hives we use, and advise others to use, are considerably larger.

The discussion of this question of large hives would properly belong to my father; but he has of late entirely given up writing, owing to his age, 81. He used to write regularly very long articles for the *Revue Internationale d'Apiculture*, published in Switzerland, in the French language. These articles also he has almost entirely discontinued, although it is much less labor for him to write French than English, as he did not learn one word of English until he was 47 years old. But, nevertheless, he is at my elbow, and occasionally criticises what I write.

When my father came to the United States, in 1863, he had kept bees many years, but had never seen a movable-frame hive with shallow frames—the Debeauvoys hives, which he used in Europe, having frames nearly square, like those of the American hive of H. A. King. These hives were not large—about the size of the present ten-frame L. hive. The hives mostly used in Europe, or in France at least, at that time, were small straw (or box) hives. The leading writers at that time were Debeauvoys, whose system was ostracized by the practical bee-keeper, because his hive, although a movable-frame one, was not practical, for the frames fitted exactly in the box, without the indispensable bee-space; and L'Abbe Colin, a box-hive bee-keeper whose great ability as an observer gave him quite a renown. The hive that he recommended above all others was a round straw hive, a print of which I send you.



Its size was a trifle under 14 inches in diameter, and its height 10 inches, and its capacity was about the same as that of a six-frame Langstroth hive.

It was with this hive that bee culture was conducted then, and was apparently successful. An improvement that was recommended by the above-named writer in his book, "*Le Guide du Propriétaire d'Abeilles*" (The Bee-owner's Guide), consisted of ekes, or stories, of the same style—three stories, or ekes, each about 4 inches high, divided by slats, forming one hive of a capacity of 1650 cubic inches, or about $6\frac{1}{2}$ Langstroth combs. It would seem

that the size of the hive has something to do with the prolificness of the queen, R. L. Taylor to the contrary notwithstanding; for as Mr. Taylor, in one of his late articles, asserts, not one queen in a hundred will lay 2500 eggs daily, continuously, for a certain period. In the same manner, L'Abbe Colin, who used still smaller hives, says in his book:

"We can not estimate at more than 600 the number of eggs that the mother of a strong colony can lay per day during the good season. April, May, and June are, for our countries (Northern France), the good season, the time of the greatest breeding. During these three months laying is not interrupted if there is honey enough in store. . . . A swarm weighing 2500 grams (a little less than 6 lbs.), contains about 23,000 workers; but a swarm of this great weight is rare."

This same writer, speaking of the super, says that it is useless to use a super of a capacity of more than 7 kilograms (about $14\frac{1}{2}$ lbs.). His supers also were of straw. This man also speaks of large hives:

"Some apiarists, using neither ekes nor supers, have adopted a hive of *great dimensions* [italics mine] with an interior capacity of 30 to 35 liters [1900 to 2100 cubic inches, about the size of the brood-chamber of the eight-frame L. hive]. This hive is not to be disdained; it does not swarm as readily as the others, but, giving larger swarms, it preserves an apiary in better condition than other hives."

Please bear in mind that this writer was a leader in France some forty years ago—in the very country where they now use hives of a capacity more than double the size he recommended, and which was then thought to be the only rational size. The work I quote from was in its third edition in 1865, and is yet considered an authority on many points, for the writer was as practical as a box-hive bee-keeper could possibly be. But probably he had never tried any thing larger than the hive he recommended; or if he had, it was perhaps as a "fad," and, as recommended by Hutchinson, "on a small scale"—too small for any results.

Before I go any further I wish the reader to remember that I am not writing in favor of large hives as a theory. We are using large hives on a large scale; we have been using them for thirty odd years, and have discarded the small hives only after long and persistent trial of both kinds, in hundreds; and our small hives were the ten-frame Langstroth hives of to-day. How this came about will be the subject of another article.

Hamilton, Ill.

[As stated at the outset by friend D., I requested him to write a series of articles on the subject of large hives from his standpoint, and not to be afraid to go over old ground; that, while the subject might be stale to him, it was not to others of us who have just begun to see the light.

It is a well-known fact that the Dadants have for years run their series of out-apiaries with little or no swarming; and if I am correct they produce as much or more honey,

with a given amount of labor, as any other bee-keepers in the world. Now that extracted and comb honey have come down so low in price it becomes almost a necessity to cut down labor; and if there is a system by means of which swarming can be largely controlled and labor diminished, let us know what that system is.

The Dadants have a large following, not only in and around Hamilton and Keokuk, but also throughout almost all of France. I have talked with several of Dadant's neighbors, and they all assert that, after testing the large and small hives side by side, they have decided in favor of the former.

This article will be followed by a number of others, and we are sure our readers will find them to be interesting and profitable, because the Dadants have long been the champions of large hives; and it is to be presumed that they know more about them than any one else in the world.—ED.]

A NEW HIVE.

Brood-nest and Super all One and the Same Thing;
a New Application of Plain Sections; a Novel
Idea, and yet One that may Bear a little
Thoughtful Consideration.

BY W. K. MORRISON.

The readers of GLEANINGS need not get frightened. I am not going to order the ordinary hive to the scrap-heap. Perhaps my idea is not so original; but if not, it is revolutionary in a degree. It contemplates the banishment of frames, separators, holders, and other old-time contrivances from the apiary. Of course, this hive o' mine is not calculated to forward the business of supply-dealers; but what care we for supply-dealers? they can starve, or march along with the times. Then, again, this hive will put a stop to a good deal of bickering. Every bee-master will be able to adopt his own spacing; he can change it every time he buys sections. He can have two bee-spaces or no bee-space, just as it suits his fancy. He can produce extracted or comb honey (or both) without altering his hive furniture. Boiled down, the whole thing is a Miller-Hilton-Morrison section-case—eke would be a better name where the case is used indiscriminately either as a brood-chamber or a super. Instead of T tins, use narrow ribbons of steel (on edge) for the sections to rest on. There are two iron screws on the side and one on the end. The one on the end need not be so large as the others, and it is very useful. The inside contains nothing but sections with a follower.

The section I prefer is $6 \times 4\frac{1}{2} \times 1\frac{1}{4}$, and each case contains 33 sections lying longwise, both for the brood-chamber and the super, as all parts of the hive are exactly alike. Such a section is not too narrow; possibly a narrower one would suit the consumer better. The pound of honey looks vastly bigger, and, above every thing else, the public want bigness. There is much to be said in favor of the narrow sections. The main point is, that

they require no separators. With the screws properly adjusted, there is very little scraping needed. No coaxing is required to get the bees to go upstairs, as there is no preference, the whole hive being alike. Well-filled nice-looking sections are used, as comb honey not so good is put into the solar extractor.

A good many will find objections to this hive; but let them think about it and experiment the coming season. I can anticipate some of the most prominent objections. It will be said that such a hive encourages swarming. This will depend altogether on how it is used; but here let me emphasize the fact that this hive can be used properly only with full sheets of foundation of the different kinds. Deep-cell foundation is used for comb honey, and extra thin for extracted honey; but the *modus operandi* can be discovered only by experience. The bees breed and work in this kind of hive pretty much as they do in other hives. To control swarming, it is necessary to add room from below occasionally. Some practical men will say that good comb honey can not be produced without separators. This is true of the sections now in use, but it is not true of narrow sections, or what ought to be termed normal sections. The normal comb is $\frac{7}{8}$ inch in thickness. Will any of your readers give a good reason why comb honey should be thicker?

An important point is to have the foundation fastened on all sides; and to do this I use a peculiar method. My plan is to cut the foundation into small triangles, and fasten two such pieces into each section. This insures rigid foundation that, no matter how the section may be placed, will neither sag nor bend.

In making the cases or ekes it is necessary to make the four corners very strong, as the pressure of the screws is very great. By proper adjustment, propolization is reduced to a minimum.

The general idea of the hive is not new. The Stewarton hive, of Scotland, which has been in use for over a hundred years, is founded on similar ideas. My own ideas on the subject were engendered by observing the working of the ordinary straw hive of our forefathers. I have seen excellent yields obtained by people who never used any other hive—as much as 220 lbs. from a first swarm. In pondering over the matter I came to the conclusion that there was only one objection to this kind of hive; viz., the honey is not got out in a marketable shape. The Scotch add to their hives from below to prevent swarming till these assume large dimensions.

If it had not been for the recent developments in the foundation business such a hive would not be possible. To bee-keepers who are all the while meddling with the brood-chamber this hive will be of no service; but to the man who has hundreds of hives to attend to, and who has no time to fool with his bees, it will be welcome. The summer labor is largely reduced if the apiarist looks after his business well and has all his cases stacked up ready for business in the spring before the rush comes on. Every bee-keeper follows his

own pet plan; every locality calls for different management; but the underlying principles are the same. This hive calls for entirely new methods of working, that each one can find out only by direct experiment. It will be well for all to make a trial of this hive the coming season. One hive will be enough to test it. The experimenters will find that the bees like the hive, and live and thrive in it. Only a box hive is simpler, and yet is mobile enough for every purpose. The sections are easier to handle than closed end frames. There is no extracting to be done. The hive is warmer. It can be more readily transported than an L. hive. It can be made small or great, deep or shallow. It is a comb-honey hive and extracted hive all in one; also a good

side wedging goes to show that he would have to have a substitute for the fences to hold the sections apart. As he says he uses no separators, I infer he would use some sort of stop or spacer to separate the sections, and that, when the same are wedged together, they would squeeze against these stops.

A hive as simple as possible—one cover and bottom, and one shell or body which might be used either as a super or as a brood-nest, might be a great boon to the farmer bee-keeper, and perhaps to those who handle colonies by the hundred. It goes without saying, that it would effect an enormous saving in expense, if such a thing could be accomplished. The question would naturally arise, however, Can a plain section honey-box, $6 \times 4\frac{1}{2} \times 1\frac{1}{4}$ be used



MR. WARDELL, AND A BATCH OF HIS DOOLITTLE QUEEN-CELLS, REARED AT THE HOME OF THE HONEY-BEES. SEE EDITORIAL.

queen-rearing hive. It can do any thing any other hive can do, and more.

Devonshire, Bermuda.

[Some little time ago I said that Mr. Morrison would soon tell us something about a kind of hive that had no brood-frames, but which made use of plain sections to perform both the function of brood-frame and honey-box at the same time. The article above details the plan.

The description is perfectly clear save in one point; namely, that friend Morrison does not anywhere, that I can discover, tell *how* he separates the plain sections from each other. The fact that he uses thumbscrews to produce

in lieu of a brood-frame? If such a thing is possible, then, of course, those plain sections that have had brood reared in them would always have to be used for that purpose; that is, they could not be used for marketing comb honey. Other supers would, of course, have to be refilled with clean, fresh, new plain sections ready to receive new comb honey; so that, after all, the bee-keeper would have his distinctive brood-supers and his distinctive comb-honey supers, although the construction of both would be identical.

I see just one objection to Mr. Morrison's plan; and that is, it abrogates entirely the extractor and extracted honey; for I assume

that no bee-keeper could afford to put up with these little boxes in the production of honey in the liquid form. Friend M. assumes that, with such a hive, one could produce either comb or extracted; but I doubt whether the average bee-keeper could produce extracted honey with such a hive, that could compete in the market.

If our readers do not thoroughly understand this form of hive, perhaps it may be well to have an illustration prepared. I can see it clearly in my own mind, and I doubt not that many of you see it as well.—E.D.]

RAMBLE 152.

Rambler has some Fun "in a Horn."

BY RAMBLER.

From my attitude at the close of the last Ramble I hope no one thought I found Mr. Dayton in the tank. Oh, no! Dayton was not there to be captured; he is too sharp to be captured in such a trap as that. But we did not give up the pursuit. Learning from Mrs. Dayton the location of the apiary, which was near a grove of gum-trees about a mile away, we immediately made a strategic movement against it. We advanced our skirmish-lines in various directions; and, owing to the ignorance of various foreign women, we were misdirected, and became hopelessly entangled in gum-groves, back yards, dog-kennels, and chicken-coops. A retreat was sounded, and we fell back on to the railroad station in good order. Here an honest Hibernian gave us the necessary directions, and we were soon charging down upon the apiary. Mr. Cowan commenced the bombardment of the works with his artillery (camera), but no Dayton appeared to defend it, and we took partial possession.

Mr. Dayton practices migratory bee-keeping. Like Mr. Brodbeck he goes out some thirty miles in a northerly direction, and camps with the bees in the hills where sage abounds. When the hill district is gleaned of all the honey it can produce, the bees are moved to the home location near the city, and here we found them. The hives were sheltered by a blue-gum grove to the south of it, and as a further protection there was a good growth of weeds around the hives. The bees seemed to be in a remarkably healthy condition. In the absence of their commander they put on their war-paint and gave us no rest.

Mr. Dayton has peculiar notions about hives as well as the rest of us, and has settled down upon a frame about 12 inches square, or perhaps a little less. I have to guess at the size. One peculiar feature of this hive is that there is no bottom entrance. There are two $\frac{3}{4}$ -inch auger-holes a little more than half way up the front of the hive. Over these holes is affixed a half-round oblong perforated metal drone includer and excluder.

When Mr. Cowan and I looked upon the apiary it appeared as though it had recently been subjected to a removal, for the covers were nailed on securely.

Mr. Dayton well knows that he can get as much honey from a hive made from an old kerosene-case as he could from a hive made from mahogany. The hives are, therefore, made of cheap lumber, and the covers never shrink or warp; for if the hive is made from a kerosene-case the can is taken for a cover. When the bees are to be removed, all the operator has to do is to stick corks into the auger-hole entrances and they are ready.

A great many bee-keepers execrate a small frame for extracting. Well, here we have the smallest super yet. Trusting to my eye again for a measure I should say that it is about 12 inches in length and five in depth. Mr. D. believes that bees will commence storing honey sooner in a shallow than in a deep super; then if he has enough of them they can be rapidly storified. Though Mr. D. prefers these very small frames, Mrs. Dayton, Sr., uttered some strong objections. She also uttered the same for Mrs. Dayton, Jr. The complaint seemed to be that the bees filled the supers so quickly that it kept them extracting all the time. I had an idea that point was a very good one for the honey-getting qualities of the frame; but Mrs. Dayton thinks that a larger frame, though filled more leisurely, would produce quite as much honey with less labor to the apiarist.

There are also but few bee-keepers who would prefer an auger-hole entrance toward the top of the hive. While the most of us can find objections to this feature, the most unique was presented by a bee man I met on the streets of Los Angeles. He evidently was using the Dayton hive, for he said, "I purchased three colonies of bees from a fellow who believes in putting the entrance near the top of the hive. The bees can not do as well in such a hive, for I have tried it to my satisfaction, and know. You see, the bees have to bring all dead bees, miller-worms, and all waste from the bottom of the hive to that hole; and just as they get up there with the load another bee coming in hits it a bump and away it goes again to the bottom of the hive, to be lifted to that hole again, and again knocked back. Those three swarms of mine actually spent the most of their time all summer trying to clean house, and finally gave it up in despair and swarmed out."

In spite of this adverse report, Mr. Dayton has good success with the hive. Mrs. Dayton, Sr., and Mr. and Mrs. Dayton, Jr., all have a hand in the business, not only in the production out in the hills, but also in the selling. The home market is thoroughly worked, and, having a large city in which to retail it, the honey is all worked off in that way.

Mrs. Dayton informed us that her son had built up his apiary from a small beginning, without capital, and had so far progressed that the house he was building owed its existence to the profits from the bees. Mr. Cowan and I (and especially I) disliked very much to be deprived the privilege of capturing Mr. Dayton, and discussing with him his methods of management; but fate and his legs ordered it otherwise, and we retired in good order to the city.

A few days after our campaign I met Mr. Brodbeck, and related to him our experience; and I asked, "Mr. Brodbeck, do you suppose Mr. Dayton left that building on account of the presence of a Britisher?"

"What! an American run for a Britisher? no, never; Mr. Dayton is not that sort of American; but, ha, ha! I know just what was the matter. Why, Mr. Rambler, anybody who knows you would run when he sees you coming. I don't blame Dayton a bit. Why! if I did not have my terrors always on hand to defend me I'd run too; ha, ha! get away, Rambler, get away. Here, Juno; here, Spot!"

"Well, now, see here, Brodbeck; you are rather rough on a fellow when it is a fact that



I do my share of the running; and as to the Britisher, I would rather run with him than to run from him; but in another field of action I had a close call, and not long ago, and I tell you I did get away lively. See those two gray hairs in my mustache as the result? You remember that tall A. D. D. Wood, who was out here from Michigan not long ago?"

"Oh, yes! that fellow who was going to breed queens on the Island of Catilina."

"Yes, that's the chap; you see he and I were talking about Michigan, and he was regretting how he had left his wife and children in Lansing. I helped him regret a little, and then, says I, 'Any man who will leave a

family away back east, and come out to California, doesn't think much of them.' Of course, I just meant it as a joke. I knew he thought just as much of his family as you do of those pug terrors of yours — ha, ha! never mind, Brodbeck; *never mind*; let the dogs rest—but Wood did not take it kindly, and he put up a job on me.

"You see, he had a friend here he called Cap. Wood and Cap were great cronies. Wood owed Cap 75 cents; and as I went within a block of Cap's residence when I went to my lodgings he requested me to hand the change to him, which I agreed to do. Now, Wood knew that Cap was not at home, and he knew that Cap's wife is as deaf as a post, and never a word did he say to me about it. I waltzed right up to Cap's door, with the innocence that every one has when doing a good deed. While waiting for an answer to the bell I noticed a sign on the door giving information that a face-mixer lived there; that is, if there are wrinkles on your face, nose too large, ears prominent, lips thick, all can be remodeled upon beautiful lines. My bell-call was answered by an amazonian woman who led the way silently into the ante-room.

"Said I, 'Is Cap Grinkle in?'"

"But she kept right along across the room to a dressing-case and took up what I at first thought a blacksnake whip; but when she put one end of it into her ear, and held the other up to me, and laconically said, 'Talk,' I took the hint that it was a new-fangled ear-trumpet, and began to talk about the business in hand at long range; but she said, 'Don't understand; come nearer.' The instrument was an awful short affair; and, with the great drops of sweat rolling down my pallid cheeks, I edged up a little nearer; but, as inexorable as fate, she said, 'Nearer, nearer,' until my mouth was fairly in the instrument, and my nose within an inch of her nose. She eyed my face so critically I expected she might claim me for her long-lost brother, and joyfully throw her arms around my neck; and, Brodbeck, if she had I would have certainly fainted away; but with a trembling voice I went for the business in hand. Said I, 'I was sent around here to see Mr. Grinkle.'

"'Why, yes, we can take up wrinkles,' said she, joyfully; and, suddenly dropping her end of the instrument, 'I observe you have some prominent ones on your face; just cut out a little here,' said she, putting her finger on my face; 'pull the cuticle back, and the wrinkle disappears, and you look 20 years younger. Ha, ha!' She evidently thought I was going to laugh too; but I didn't; 'then your ears might be improved the same way; and I think your nose would be greatly improved by taking out that lump—he, he!' I

didn't laugh this time either; 'can give you an operation in the morning for an even \$25—he, he!' She talked rapidly, energetically, and with a highly professional tone. All the time she was talking I was desperately trying to talk through the instrument. You have probably heard of persons talking through their hats; well, the small end of that instrument had fallen into my vest pocket, and I was talking into that all the time; but just as soon as her professional talk had been exhausted the ear connection was restored.

"From her smiling appearance I suppose she thought I would say, 'Yes, I'll come around with that \$25 in the morning;' but instead I said, as plainly as I could through the tube, 'Mr. Wood sent this money (holding up the silver) to your husband.'

BEE-KEEPING IN "MERRIE ENGLAND."

Apiary of Wm. Woodley.

We give here a view of the "Home of the Honey-bees" at "World's End," near Newbury, Berks, the owner thereof being Mr. Wm. Woodley, well known to readers of this journal as the contributor of "Notes by the Way" to its pages. The photo from which our illustration is reproduced was taken some six years ago, but the hives occupy the same positions now as then, except that the straw skeps shown in the picture have gone the way of all things of a like nature. Close observation will show a small hive with a round hole in its center for an entrance, standing on the top of the twin hive in the foreground.



APIARY OF WM. WOODLEY.—FROM BRITISH BEE JOURNAL.

"'Oh! I see,' said she in an entirely different and normal tone; and, looking upon my face with a \$25 regret, she exclaimed, with moisture in the eye, 'Then you do not want those wrin—'

"'No, no!' I shouted, as I dropped Wood's change into her hand, and rushed unceremoniously out of the house and down the street, where I execrated the Wood family even unto the third and fourth generation.

"Did I get even with Wood? Well, I should say so. You see he was helping around a sausage-factory at the time, and he heard that I threatened to run him through the sausage-machine on sight, and he skipped out for Michigan; and I shouldn't wonder if he were skipping yet."

This was the home of a nest of bumble-bees, the property of Mr. Woodley's son, who, when a lad, used to keep several such hives tenanted during the summer months with colonies of the genus *Bombus*. The figures shown are those of Mr. and Mrs. W., engaged in what will, no doubt, be a daily item of their bee-work during the busy season, viz., that of removing full racks of sections and replacing them with empty ones.

The house in the further corner, on the left, was erected as a combination summer and manipulating house, at a time when the old shake-off or brush-away process of removing finished sections was in vogue. We learn that many a retreat from troublesome or angry and vicious bees has taken place behind the

then thickly curtained doorway when removing honey, causing the work in the neighboring farmyard to be carefully studied in order to prevent "war" between the workers of the hives and those in the rick-yard adjoining. This trouble is now happily ended, and, thanks to the super-clearer, we are told that "peace" now reigns between both sets of workers, and honey is removed at any time "even when the neighbors are garnering their corn the other side of the windbreak." The portion of a building on the right is a Wesleyan chapel, but Mr. W. and family regularly attend Beedon Church, in the parish of Hampstead Norris, three miles from his own village.

In addition to the home apiary, with its over a hundred hives, shown in the illustration, Mr. Woodley has an out-apiary of fifty to sixty hives at Stanmore, a little over two miles from his house at Beedon. This entails considerable labor during the summer months, and the only help he gets in all the actual work of both apiaries is that of Mrs. Woodley, who may be taken as an ideal bee-man's wife. To use her husband's own words, "she has proved a true helpmeet in every thing pertaining to the work in the apiary, either in hiving and packing swarms, folding and preparing sections for putting on the hives, cleaning and glazing sections after removal from the hives, for show or market, and thus handling in some way nearly all the output for the past fifteen years from both apiaries. The only help we have is that of an old man to watch for and hive swarms into straw skeps of the out-apiary during the swarming season." Mr. Woodley further tells us: "The work of preparing the produce of our apiaries for market is by no means a small job, the bulk being in sections, while nearly every parcel is double glassed with lace-paper edging in our well-known style, and each year brings a wider demand for this form of 'putting up,' without advertising of any kind. In fact, the goods advertise themselves, and inquiries reach us from distant towns for a sample dozen, which invariably leads to repeat orders." That our friend makes bee-keeping pay seems fairly clear from the above; and although his prices may not be so good as in past years, he still holds his own, and for finest selected glazed sections still gets the good old price of \$2.42 per dozen wholesale, and corresponding values for second and third grades.

The "home" which contains the leading spirits of this "Home of the Honey-bees" must also be a busy one, winter or summer; for, while the bees outside are enjoying their winter's rest, the master and mistress of the "home" are busy the year through, bee-work forming an important item at all seasons. The mistress, we are told, varies her household duties with glazing sections as the orders for these come in during the autumn and winter, and in spring and summer with the

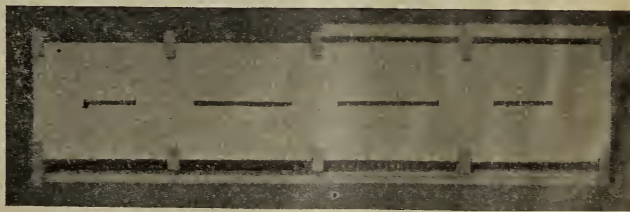
multifarious jobs incident to a busy life. The master also adds on to the labors of his trade the continual care of the bees; breeding queens, overhauling, cleaning, repairing, and painting hives, and all the hundred items incidental to the well-doing of a couple of apiaries two miles apart. A large correspondence also occupies a good deal of time in certain seasons; and when one thinks of the many journeys (to and fro) to the out-apiary (all on foot), not forgetting the packing of—we might say—tons of honey, so that it shall escape damage from the tender mercies of the railway porter, who will say that the bee-man—like his bees—is not "busy"? But this is not all, for we learn of Mr. Woodley that the public calls on his time are by no means few. Our friend is secretary and agent to a large branch of a benefit club, and vice-chairman of the parish council. He is also district councillor and guardian, and acting overseer for the parish of Hampstead Norris, besides being a member of the Council of the Berks Bee-keepers' Association, and of the Committee of the Newbury District Bee-keepers' Association. Mr. Woodley was born in 1846, and Mrs. Woodley in 1852, so that our busy friends are in the prime of life.—*British Bee Journal*.

PLAIN SECTIONS.

Comb Honey from Fences and Comb Honey from Plain Separators; No Ribbed Comb Honey.

BY J. A. GOLDEN.

Mr. E. R. Root.—Your note was received on the 22d, referring to my letter of last spring in regard to my separator you speak of, of which I had sent you a photo. After reading your letter I went to the bee-house and took one of the middle rows of sections from the super containing this style of separator, took my knife, and clipped off the most of the propolis, took them to the machine, and cleaned them. Then I took one of the middle rows from a super containing the Root slatted separators, or fences, and cleaned them; then took one of the middle rows containing the plain separator, and cleaned them;



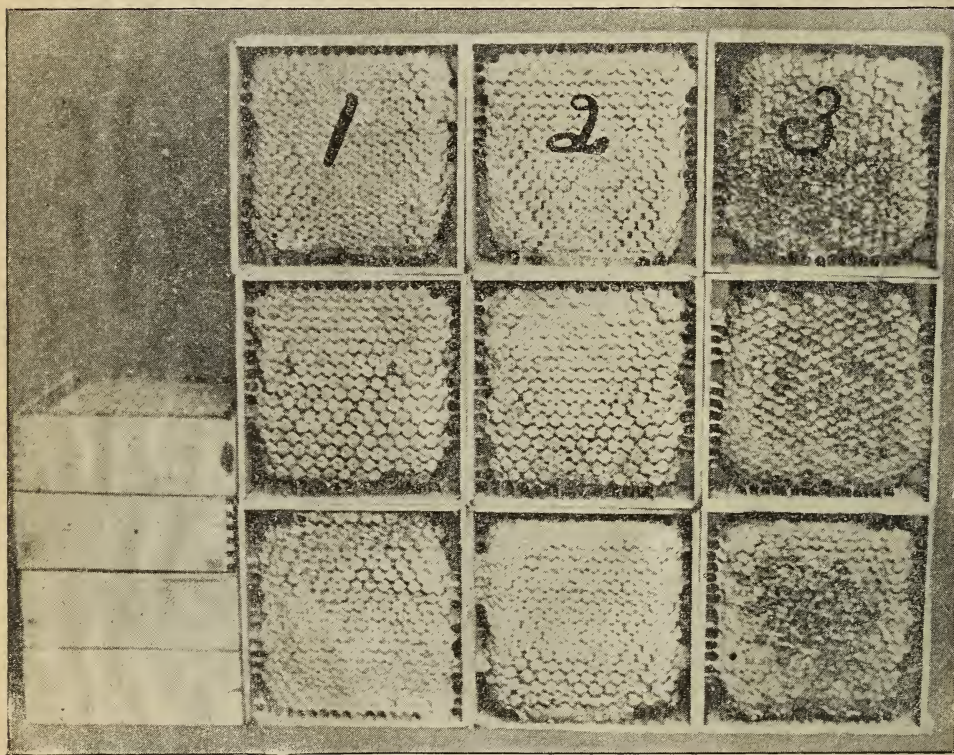
then, placing them on the stand and piling a few sections to the left of the three rows, to show how nicely they can be tiered up or crated, I took my Kodak and shot the whole pile, and I inclose you a view of those sections the result of my experiment with the three kinds of separators, showing indisputable

facts as they appear in the cut or photo referred to, and all having the same conditions from which this honey was produced, such as starters of foundation, strength of colonies, putting on and taking off, and a very discouraging season. The first row was produced between our separators; the second row between the Root slatted separators; the third row between the plain separators.

In presenting this experiment by a photo, to the readers of the bee-papers, I want it distinctly understood that the selection was made, as above stated, from the different colonies; therefore we represent the three just as they were produced; and while there appears such a sameness, there is one very noticeable feature. The sections produced

whatever with comb produced between the Root slatted nor my separator, which has a slot or slots from $\frac{1}{4}$ inch to $\frac{3}{8}$ inch wide through midway, this separator having short cleats $\frac{7}{8}$ inch thick, with a saw-kerf at one end, and the cleats are glued and slipped on each side at the proper bearings, as shown. However, I use full strips at each end in place of the short cleats, as shown in the engraving, thus giving a much stronger and better separator, and, being easily constructed, any bee-keeper can make them.

But after all, so far as I have observed there is no separator that will excel the fence as manufactured by The A. I. Root Co. If the three-inch cleats or short cleats were beveled back to the first opening between slats at each



HONEY IN PLAIN SECTIONS VS. HONEY IN OLD-STYLE SECTIONS.

between the plain separators show up much darker than either of the others. I should like to hear the opinions of our experts as to the cause of this difference, as all the bees were the same kind—Italians. Yes, I have my own idea as to the cause of so much difference in color, but I want to read the opinions of our learned apiarists—yes, and a footnote also, Mr. Editor; then I'll be honest in writing my opinion as to the reason above referred to.

There has been a good deal said about ribbed comb honey, as the result from slatted separators. So far I have not found any

end, it would give more good points than all other separators put together, or that's the way I look at it after this year's experience.

Now, all know from my past experience how I stand as to the plain sections. They do not contain nearly as much propolis; they are twice as easily cleaned; they present to me, at least, a better view, and I can clean on an average fifty to sixty sections per hour on the belt section-cleaner, and do the work nicely without the soiling of a single comb or dusting the honey. They also sell first every time—at least they do in our market; they are easily and quickly handled, and kept as

safe from injury as any section I know of; and so long as these points hold good the writer will use no other section than the plain, and the fence separator, so long as he produces comb honey. We anchor our faith on experience and its results, and not on theories alone.

Reinersville, O., July 23.

[The contrast in the photo herewith reproduced is most striking. As strong an advocate as I have been of fences, I can scarcely believe that the difference, *on the average*, would be so great as that shown. If all of the honey had been produced in one colony the test would be better; but I infer that each lot of honey, 1, 2, and 3, was produced in as many different colonies. There might have been some difference in the bees; but whether there was or not, it stands to reason that the fence gives better ventilation, and, consequently, better and thicker ripening of the honey. This would, in all probability, give whiter cappings; but I should imagine the difference would be so slight as to be almost inappreciable to the eye, or, at least, not nearly so strong as that shown in the photo above.

It is a fact, however, that all the fence honey I have seen this year has been remarkably white and pretty, while a good deal of that produced by the old-style solid separators has been dark or discolored. If friend Golden has any other reason why 1 and 2 should be whiter than 3 we should be glad to hear from him; but if the fence is at all responsible for the difference, it must be because of the freer ventilation afforded.—ED.]

FOUL BROOD IN NEW YORK.

An Appalling State of Affairs.

BY F. BOOMHOWER.

Dear Friend Ernest.—Your letter came to hand, but I have not had time to answer before. The care of so many bees of our own, together with the duties of foul-brood inspector of this county, has taken so much time that it has been hard work to find time to write before this. We have had a few cases of the disease in our home yard, and a few in one of our yards out of town. At present we have none that are diseased, but are fearful that we shall have our hands full of it this fall and next spring, as it has such a foothold surrounding us. We have more fear of diseased bees in the woods than we have from outside yards, as we can control and destroy diseased colonies in yards surrounding us, but can't control those in the woods. All the bees in the northwestern part of the county are practically wiped out, as it got such a start, having been running two years before I found out that the disease existed. If I could have known it in time, and had been inspector at the start, I could have eradicated it before it got such a start. All the bees in the vicinity of Central Bridge, Esperance, Sloansville, Carlisle and vicinity, are practically wiped out. It has reached Montgomery Co. on the

northwest and Schenectady on the northeast; and unless we have a *good* hustling State inspector I don't know where it will end. The trouble is, so many farmers keep a few bees, and they don't care a straw for the practical bee-keeper who makes it his whole business; and, of course, those who make it a business have to suffer for the carelessness of the slipshod farmer bee-keeper, of which, I will say, this State has more to the square mile than any other four States in the Union.

The farmers are very ignorant, and they have it in their heads that it is only a trumped-up idea of the practical bee-keeper to clear the bees out of the country, so the larger bee-keeper can control the territory and have the whole business to themselves.



F. BOOMHOWER.

I find it about as dangerous to be inspector as it is to go to battle in war. I have been threatened with clubs and fence-stakes, and even have had them come at me with shot-guns; but I am still alive, and carry out my examinations, and have compelled them to abide by the law in every case. New York needs a State inspector and a good law to back him up; then we shall have no trouble. Unless this is done the bee-keepers of this State will find out that they will have to step down and out for years to come. County inspection does not amount to much, as I will venture to say that not one practical bee-keeper out of a thousand is qualified to act as inspector. I have been in yards that were run by old experienced bee-keepers, and asked them if they had foul brood, and they would say, "No, sir; my bees are clear from the disease;" and upon examining them I would find it spreading all through the yard. In one case an old bee-keeper made complaint to me that foul brood was among his neighbors' bees, and wanted me to clean it up before it got to his yard, as his bees were not affected. I called upon him and asked him if he was positive that the disease was not among his

bees. He said that it was not, for he had just been over them all and clipped the queens' wings, and all were clean from it. The first hive I opened was rotten with the disease. Out of 125 colonies, 60 were badly diseased.

I wish you could be here to see the bees rushing in the honey from buckwheat. Tons of honey are going to waste for the want of bees to gather it. The country is dotted with many white fields now in full bloom. In one yard in the edge of Albany Co. we have moved 24 colonies. I will venture to say that there are over 1000 acres of buckwheat within three-fourths of a mile. I never saw buckwheat looking so finely as now; but I have great fear that we shall have to stop bee-keeping or move out of the range of foul brood.

I have written this in a great hurry, for we have to rush with the bees, as there are only two of us, and four yards of bees to look after. I have one colony that has made 251 lbs. of white honey in sections, and it has now 112 boxes nearly finished from buckwheat.

A word in regard to J. F. Teel, page 584, as to how to start foul brood. I must state that I think Mr. Teel is mistaken. I am sure foul brood can't come from chilled brood. Twenty-six years of experience, wholly as a bee-keeper, makes me say that it is impossible to start such a dreadful disease as foul brood from brood that has died from exposure or cold.

Gallupville, N. Y.

[When I was in Schoharie Co. last fall I heard of foul brood all round, but did not think then it was so badly scattered as seems to be apparent from Inspector Boomhower's report. But, dear me! what can a good inspector do if his territory is limited to *one county*? Suppose, for instance, that the dread disease is working over into Albany Co. and the other counties adjacent. It ought to be followed up just as vigorously in those counties as in Schoharie. Nay, further: a law should be passed at once whereby an inspector will have jurisdiction over the *whole State*; and to make the law effective there should be an appropriation of at least \$500, as in Wisconsin. The bee-keepers of York State should bestir themselves at once. The State and county associations should immediately consider this, and make such arrangements as will be necessary to secure the immediate passage of a law similar to the Wisconsin law. GLEANINGS will be glad to lend its columns in any way possible to bring about the desired legislation.

I know of no better man to lead the fight than Mr. W. F. Marks. Mr. M. has already rendered some quite distinguished service in the matter of forcing a measure before his State legislature, and in securing its final passage. He knows well how to "pull the ropes," and I hope that he or somebody else the York Staters may appoint to lead them will see that something is done at once.

The regions of Montgomery, Seneca, Schoharie, Otsego, Tompkins, and Albany Counties represent some of the best bee country in the world. Now, if it is a fact that foul brood

has got a fearful start right in the heart of that region, it is high time that the bee-keepers of the Empire State should rise in their might and stamp it out.—Ed.]

THE INVENTOR OF THE QUEEN-EXCLUDER.

His Giant Hives and Queen-cages, etc.

BY F. GREINER.

Now to return to Mr. Hannemann again. He was so taken up with the superiority of his system and management that he could see but little good in any other; and, being ignorant as to the conditions in other lands, notably North America, he showed mistrust of every thing that was reported from here. He says, for instance, at the close of an article of his, written in 1879: "And while my results, as shown, seem meager by the side of such yields as are reported by an Adam Grimm, I am satisfied with them because mine really exist. Grimm's are only on paper." Our older readers will remember who Adam Grimm was. He was a pioneer in American apiculture; he made more money with bees than any one else—at least in his time. His writings always had the mark of honesty upon them, and I never heard a word against his character. I took it upon myself to make a reply in the *Bienen Zeitung* (this must have been in 1880), explaining to the German bee-keepers Hannemann's alleged mysteries of American bee-keeping. Hannemann, for instance, couldn't comprehend how there could be room for 27 boxes weighing 130 lbs., on a hive having 24 x 15 inches of top surface. Grimm had reported such a yield from a single ten-frame Langstroth hive, such as was then commonly used. Hannemann had evidently never heard of *tiering up* nor of removing full boxes and replacing with empty ones, so he could not understand how the thing was possible, and at once jumped at the conclusion, "It is all a lie, a great humbug," and, worst of all, says so before the thousands of German readers. He reasoned thus:

"One hundred and thirty pounds of comb honey would occupy a space of 3500 cubic inches. To give this amount of room to a colony occupying a hive of 2500 capacity is an impossibility, as every one can see. Furthermore, it is impossible for one swarm of bees to fill such a space with combs and honey outside of the hive. It would require, with a six-weeks continuous honey-flow, 9 kilograms (19½ lbs.) of worker-bees. No queen is capable of producing this amount of bees in so small a hive, nor, for that matter, in ever so large a hive."

Well, a good many of us who have been long in the business have now and then had these phenomenal years and yields. We know from experience that it is possible for a colony to fill a space of 3500 cubic inches with combs and honey. We have had these cases under our own hand, and what we have seen with our own eyes can by no theory be reasoned out of existence. Facts are stubborn things.

Another point Mr. Hannemann was trying to make out of Grimm's reports was that the climate must be unsuitable for bee-keeping here, for a neighbor of Grimm had 99 colonies out of 100 frozen to death one winter. Here Mr. Hannemann overlooks the fact that, although a country may have very severe winters, and actually freeze the bees (a condition I can not imagine, however), yet the summers may be warm, flowers may be plentiful, and the meteorological conditions very favorable for the secretion of nectar. There is no doubt that a mild climate is favorable for the wintering of bees, and most of us wish we had that; but what of the hard winters? Are we helpless? Why has God given us our intelligence? Have we no means to combat the zero weather? Why! if necessary we could bring about a condition of 90 degrees in the shade every day in the year, as Herr Weygandt has proven with his heated bee-house. If only the summers are conducive to the welfare of our bees, and the honey-producing blossoms are present, the winter is no objection. Why, I believe we could keep bees away up at the north pole if we could only get there.

Mr. Hannemann expresses his opinion of the North American and his surroundings like this: "I esteem him highly as a man of progress; but to carry on apiculture successfully there are obstacles in his way that, with all his intelligence and ingenuity, he can never (?) hope to overcome. With steam and machinery he may be able to make very accurately his hives, etc.; but to stock them up requires a good deal of money, so it seems; and, after being stocked up, it requires the right kind of man, who must be possessed with love for and knowledge of the bees; he must have an extensive experience, etc. The climate must be suitable for bee-keeping so the colonies will send out a goodly number of swarms; and when these are on hand they must be massed together by forming giant colonies in order to obtain the best results. This is the only way."

The reader may ask here, "Why bring up all this after twenty years have passed?" Does it not show that even the wise are blind sometimes, and that half of the people do not know what the other half are doing? I think our good old friend A. I. R. could draw some valuable lessons from it, and bring them to our understanding. I write the above, principally in the hope of entertaining, perhaps amusing, my bee-keeping friends, and to bring out some good points that may be of value to some of them.

I have no old grudge against friend Hannemann, although I admit I felt somewhat indignant at first. That has all past. I now feel only my indebtedness to him. He was probably excusable for holding an adverse opinion of us American bee-keepers.

In criticising the Hannemann system, and in comparing it with our method, I wish to say this: The methods he pursued were probably all right for his particular environments, and much ahead of any thing else known to him them; but after all, the Yankee could and would greatly improve upon them. We would not only use the extractor, but also fur-

nish the bees much if not all the combs needed. I am sure it would be impractical to use the giant hives and the cages *a la* Hannemann for the production of section honey, on account of the pollen that would probably be stored in many of them. But should we pursue the Hannemann method to the letter we should probably make an article of commerce of the pollen harvested, and find a way to preserve it. I think I could sell some of it to friend Perry, friend Olmstead, and others, who are in need of it for spring feeding. A further improvement of the Hannemann system would be the liberal use of comb foundation, particularly with the view of preventing the raising of the millions of useless drones that have to be sifted out and disposed of. Of course, they would make splendid food for ducks, and I would certainly make use of them in this way if I raised them at all. Finally, I would adopt the Langstroth or Berlepsch frame instead of the bar, *a la* Dzierzon, thus preventing the mussy, disagreeable work of cutting out the honey, etc. All these are improvements of the Hannemann system, which suggest themselves to the thinking mind; with them, I believe, Hannemann might double the yield that he has been able to obtain.

I wonder what he would think of such yields as Mr. Levesy reports in *American Bee Journal*, page 452, of a bee-keeper in Salt Lake Co., Utah—an average of 363 lbs. of extracted; or the yield of J. P. Israel, the champion comb-honey producer of the world, reported to be 662 lbs. of comb honey per colony. Such yields are phenomenal indeed. Are they true, or only "on paper"? If Mr. Hannemann has seen the photos of our honey exhibits at the Centennial, or their reproductions, he may now conclude that the North American, with his intelligence and proverbial ingenuity, can well overcome obstacles that seem unconquerable to him, which, however, existed largely in his imagination. If that does not convince him I am afraid nothing will.

Naples, N. Y., July, 1898.



FROM THE EGG TO THE PERFECT BEE.

Question.—I see by the bee-papers that some seem to think that the bee remains in the larval form only about four days, while Dr. Miller put it at five days in a late number of *GLEANINGS*. Which is right? In some of our operations with bees it would sometimes make quite a difference with our calculations if bees hatched sooner than we expected, especially so in queen-rearing.

Answer.—Well, when Dr. Miller makes a positive assertion in any matter it is quite apt to be correct; but, as a rule, we find him say-

ing, "I don't know." And this saying of his often reminds me of a story; and as I have not told any stories in any of my late articles I think the editor will excuse me if I tell one at the beginning of this reply instead of at the end, as is my usual custom. The story is about the late Henry Ward Beecher, who used to say that a problem in mathematics taught him *reliance*, and he told this story to prove it:

"My teacher in mathematics taught me to depend on myself in this wise: I was sent to the blackboard, and went uncertain, and full of whimpering. 'That lesson must be learned,' said my teacher, in a very quiet tone, but with a terrible intensity. All explanations and excuses he trod under foot with utter scornfulness. 'I want that problem; I don't want any reasons why you haven't it,' he would say. 'I did study two hours.' 'That's nothing to me; I want the lesson. You need not study it at all, or you may study it ten hours, just to suit yourself. I want the lesson.' It was tough for a green boy; but it seasoned me. In less than a month I had the most intense sense of intellectual independence and courage to defend my recitations. One day his cold calm voice fell upon me in the midst of a demonstration. 'No.' I hesitated, and then went back to the beginning, and on reaching the same point again, 'No!' uttered in a tone of conviction, barred my progress. 'The next!' and I sat down in red confusion. He, too, was stopped with 'No!' but went right on, finished, and, as he sat down, was rewarded with 'very well.' 'Why,' whimpered I, 'I recited it just as he did, and you said 'No!' 'Why didn't you say yes, and stick to it? It is not enough to learn your lesson; you must *know* that you know it. You have learned nothing till you are sure. If all the world says no, your business is to say *yes*, and prove it.'"

And now, Dr. M., without wishing to give any offense, allow me to say that quite a number have written me during the past, in substance, "Why doesn't the doctor say yes, and prove it?" And as our correspondent says you stated that bees were in the larval form five days, we want you to "prove it" if you did say so; for, from all of my experience, I am led to say "No" to the five-days theory, and right here I am going to try to prove the "No" for the readers of GLEANINGS and the questioner; and if the opposition prove differently, I am going to do still further experimenting along this line of "from the egg to the perfect bee" till the *right* comes uppermost.

Quinby told us in his "Mysteries of Bee-keeping Explained," which book was published about 1865, that the egg, as laid by the queen in worker-cells, hatches in three days to a larva; this larva is fed by the nurse-bees six days, when the cell containing it is sealed over, remaining thus for twelve days, during which time it undergoes the change "from caterpillar to butterfly," when the covering to the cell is eaten off and it emerges a perfect bee, being a period of 21 days from the laying of the egg to the perfect bee, making a little allowance for the weather, as very warm

weather hastens this development to a limited extent, and cold weather retards the same.

Always being desirous to know things for a certainty, so far as they can be ascertained, I conducted experiments which proved to my satisfaction that Quinby was correct. I placed a frame of nice worker comb in the center of a populous colony about June first, and looked at it very often till I found eggs in it, which date I marked on top of the frame. In about two hours less than three days I found larvæ hatched, and in six days and three hours the first larvæ were fully sealed over. Twelve days thereafter I found a very few bees just biting off the covering to their cells, where the first eggs were laid.

From this trial I was entirely satisfied as to the correctness of Quinby till a few years ago when I was withstood by a bee-keeper of considerable prominence who said that bees are in the larval form but little more than three days. I was about to contradict the statement, but concluded that I would not, as I had made only the one experiment; still, I could not think that both Quinby and myself were wrong. So I went to experimenting again, the weather being extremely hot at this time, while it was moderately cool when I tried the first experiment. The result during this hot weather was very nearly three days in the egg, five and three-fourths days in the larva, and eleven and one-fourth days in the pupa state, making twenty days in all; and this is the shortest period of time I ever knew workers to emerge from their cells after the egg was laid, under any circumstances. Besides this, I have many times cut out all queen-cells but one, from colonies seven to eight days after a prime swarm had issued from them, and had said colonies build queen-cells over larvæ still unsealed, and, when these queens were old enough to hatch, send out a swarm with the queen hatching from the cell I had left when the rest were cut. It may be possible in the South, with extreme heat, for bees to hatch in less than twenty days from the laying of the egg; but I doubt about that time being reduced very much, even under such circumstances. On the other hand, I have known very nearly twenty-four days to elapse with weak colonies and cold weather while the bee was developing. But twenty-one days is the rule, according to all of my general work among the bees during the past nearly thirty years, and this rule can be depended upon in governing all of our methods of dividing bees, etc., where it is necessary that we should have some knowledge in these matters. The time of the year when the development of brood is most retarded by cool weather is in the fall, and when most accelerated by warm weather in May and June. The reason for this is that bees are very active in spring and early summer, while they become quite sluggish on the approach of winter.

In conclusion, perhaps I should say that I find the rule with queens to be, three days in the egg form, five and one-half days in the larval form, and from seven and one-fourth to seven and three-fourths in the pupa form,

making an average of sixteen days from the egg to the fully mature queen.

THE HIVE OR THE MAN.

Question.—I have just entered the ranks of bee-keepers, and am very much interested in hives. A few miles on one side of me is a man who keeps bees in the American hive. On the other side of me, at about an equal distance, lives a man who keeps bees in the Langstroth hive, while in still another direction is a man who keeps bees in a hive of his own invention. During the present season the man having his own hive has secured a yield of about 30 pounds from each hive, on an average, while neither of the other two, with the American or Langstroth hives, has secured any, and they tell me if their bees secure only honey enough for winter they will do well. The man with his own hive claims that neither the American nor the Langstroth hive gives any great yields of honey; and had the other two had and used his hive they would have secured honey the same as he did. Is this claim right? If not, why did he secure honey while the other two did not? As I am beginning in bee-keeping, I am anxious to start with the right hive, so I may meet with success.

Answer.—From the above and other numerous questions asked, and the hosts which are clamoring for the *best* hive, it would seem that all one had to do was to get one of that neighbor's *own* hive, or the Gallup, Root, Langstroth, American, Quinby, Hoffman, Heddon, or some other good hive, to meet with certain success in apiculture. No matter how poorly attended to, if we only have a *good* hive we certainly shall have honey to sell and give away. From the many failures in the bee-business, and the shipwreck ending in disaster of so many who start out joyously when embarking in this business, it would seem as if they depended simply on using or having their bees in good hives. While a good hive has *much* to do with the results of bee-keeping, the *man* has *much more* to do with success or failure. Do men buy choice animals of any kind and let them take care of themselves, expecting a profit from them? No; they spare no pains to have them properly cared for, and give them every chance in their power that looks or tends toward success. Yet those same men, should they embark in the bee business, will expect a large income from bees if they only have them in a good hive, if they do not do any thing for them once in six months. As well provide a good stable for choice stock, and then let them shirk for themselves, expecting a profit from them. Men do not do this way with the stock, and why should they with the bees? The idea that bees "work for nothing and board themselves" must be banished from our thoughts before we secure much profit from them. Successful bee-keeping means *work*, and lots of it, for a man with brains enough to know that he must leave no stone unturned that tends toward success. A good hive in the hands of such a man, with a good season, is a power which rolls up tons of honey, and

shows to the masses of people that there is money in the bee-business. Such a man will have his bees in readiness for the honey-harvest when it comes, and do things in just the right time to secure the best results. I am often asked, "What advantage have any of the movable-frame hives enumerated above over a box hive?" Much, every way, in the hands of a skilled apiarist, but none at all with the man who never handles the frames to take advantage of the benefits to be derived from a judicious spreading of the brood, by making the strong help the weak; by giving stores, from those having more than an abundance, to the needy; by cutting out queen-cells to keep from ruinous overswarming, etc. What are movable frames good for, if not for the above purpose? and yet we have those all over the country who do not take a frame out of a hive once a year, and call themselves bee-keepers, and wonder why they don't succeed as Mr. A does. They have the same hives, they are sure.

We come along some morning and say, "Good morning, friend B. How do the bees prosper?"

"Pretty well, I guess; I have lifted the hives, and they all feel quite heavy. See here; lift this one. There, is not that a good one? I'll get lots of honey from that one this season."

We step to the entrance and see very few bees flying. When we ask, "How many square inches of brood is there in this hive?" he says, "Oh! I don't know. I have not had the frames out since the bees were put into the hive. I do not believe in fussing with bees as Mr. A does."

Thus we find plenty of bee-keepers, or those calling themselves such, all over the land. Is it any wonder we have plenty of candidates for blasted hopes? Mr. B does not seem to realize that it is just this "fussing," as he calls it, of Mr. A that makes his success so much greater than his own. I do not want it understood that a person is to be kept constantly overhauling his hives to make bee-keeping successful. No, not that. What I mean is that, when a gain is to be made by looking inside of a hive, do it, and at just the time it is needed. Spread the brood in just the right time, put on the sections in just the right time, cut out the queen-cells in just the right time, and so on with all of the work of the apiary; and do not keep any more colonies than you can care for and have every thing done in good order. Better results can be secured with thirty colonies properly attended to than with one hundred poorly attended to, or, what is often the case, not attended to at all. What I want to impress upon the minds of the readers of GLEANINGS is this: That a thorough, practical apiarist will succeed with almost any of the frame hives now in use, while a careless slipshod man will not pay his way with the best hive ever invented.

My bees have done the best this season they have for the last eight years.

Blaine, Wash., Aug. 17.

J. B. RAMAGE.



I PRESUME that, while this issue is going to press, A. I. R. and yours truly will be among the bee-keepers at the Omaha convention that is to take place on the 13th, 14th, and 15th instant.

GRAVENHORST DEAD.

JUST as we go to press we are pained to learn of the death of that skillful bee-keeper, celebrated author, and accomplished gentleman, C. J. H. Gravenhorst. He died at his home in Wilsnack, Germany, Aug. 21, aged 75. Particulars later.

A CORRECTION.

IN my answer to Mr. Doolittle, page 625, referring to deep and wide entrances, I said, "One swallow does not make a summer, neither do two or three of them," implying that Mr. D. had tried only three colonies, when in fact he had tried ten with deep entrances, and ten with the regulation kind, with the result that three of the former swarmed. I am glad to make this correction, although I still believe that the test even then was too limited to be conclusive, as compared with the tests made by my neighbor Mr. Vernon Burt, who has tried them on 300 colonies for a period of three years with the greatest satisfaction.

HEAVY TESTIMONY IN FAVOR OF THE PLAIN SECTIONS.

A SHORT time ago we sent a lot of honey to the Columbus Commission and Storage Co., Columbus, O. It so happened that there was just one case containing honey in plain sections. These people had never seen honey so put up before, and it is evident they had not seen any of the "discussion" regarding the new sections. All they knew was they had one case of honey that would outsell any other case in the lot. Well, here is their letter, which will speak for itself:

There was one case of the Elsie, Mich., lot that we opened this morning, that had 15 sections. The case was marked "plain sections," about 12 pounds net. This was a very fine case of honey, and brought 15 cts. We thought we had more of it, and showed it to some of our trade; and the result was, we took orders from every man who saw it, for two or three cases. Do you know where we can get some of this? Are all "plain sections" short-weight—that is, less than a pound? We should like to get a lot of this kind, and can use anywhere from 100 to 1000 cases.

THE COLUMBUS COMMISSION & STORAGE CO.
Columbus, Ohio.

This only goes to prove that honey in plain sections, in some markets at least, will outsell honey in old-style sections. This statement was put forth by S. A. Niver, by L. A. Aspinwall, of Jackson, Mich., and others, last winter. But here it is verified by unprejudiced parties in at least one market—yes, they actually want to get 100 or 1000 cases of honey in plain sections.

MY TRIP EAST AGAIN.

I HAVE just returned from a trip of two weeks to the East, part of the time at the seashore.* Mrs. Root stipulated this time that I was not to see any bee-keepers, but just rest and recuperate. I felt "tiptop" while in the harness at home; but after I got away to "rest and recuperate," at Sea Girt, N. J., I was sick nearly all the time. Change of water, and hot climate, I suppose, were the causes. I said, *nearly* all the time. Well, I did steal away for two days to visit with Mr. W. A. Selser, at Philadelphia; and at his home, Jenkintown, I had the pleasure of meeting some thirty or forty bee-keepers for a pleasant chat and exchange of ideas. Some of them thought they would tire me out, as they kept me on the floor nearly two hours, answering questions; but I never felt better—in fact, I was feeling in good trim all the time I was with my good friends. I had been sick prior to going to Philadelphia, and had recovered sufficiently to get away. After leaving my bee-keeping friends, and returning to the sea-coast, I was sick again most of the time. A doctor in the East told me I was all run down, and gave me some good advice—not to work so hard; but now that I have returned home, I am feeling strong and well. I believe it agrees with me to get among bee-keepers and the hum of the busy bees again; and I am beginning to feel that there is no place quite so bad as away from home when one is sick.

No, I am not all run down—at least not from overwork; but give me a change of water, a change of diet—crabs, lobsters, and the like—and put me in a hot climate—well, it does not usually take long to make me look more like a cadaver than like a living healthy man, which I feel I am.

AN IMPORTANT FACTOR IN REARING QUEEN-CELLS A LA DOOLITTLE.

SOME years ago, when our Mr. Spafford tried the Doolittle plan, he failed; and a little later, while our Mr. Wardell was on a vacation, Mr. S. tried his hand at it again, but with no better success; but on inquiry I learned that Mr. Wardell feeds slowly all the time the cells are building, while Mr. S. did not. This may and probably does explain our earlier failures, and I think it very important to emphasize the point right here. It begins to be evident now that nearly all of the leading queen-breeders are using the Doolittle method of raising queens; and the result is that first-class queens are sold for very much less money than they were ever sold for before. The great big beauties that have been going out from our yard would, it seems to me, please the eye of any lover of fine queens. Why, they are so big that it is with difficulty they can turn around in the compartment of an ordinary queen-cage.

As Mr. Wardell has made a success of the Doolittle method, I take pleasure in giving you a Kodak view of him, together with a batch of cells that he had just taken out of

* Copy for last issue was prepared two weeks in advance.

one of his hives. He now, I believe, prefers to rear "cells" on a stick (shown on p. 647), as it saves the mutilation of good comb. The view was taken with a pocket folding Kodak; and as it has since been enlarged by the engraver to nearly twice its former size, the result is certainly quite remarkable. The likeness of Mr. Wardell is most excellent, and the factory building in the background can not be other than natural.

Mr. Wardell showed me two colonies that had already completed 100 cells, and they were still working on another batch; and, what is more, he expects to keep them right at it as long as the weather permits. Both of these colonies have old or defective queens; and when he was going through the apiary he discovered, early in July, that each of them was rearing cells as if about to supersede the old queens. He marked these to rear cells, cut out the cells already in the hive, and gave each a batch of Doolittle cell-cups. After the light honey-flow ceased he kept feeding each slowly while cell-building was going on.

He has other colonies with old queens that are kept at the same business of rearing cells, and in the same way. Whenever he finds a colony about to supersede its queen he sets it aside for cell-building exclusively. Such colonies he considers extremely valuable, as, for aught he knows, he can keep them building cells clear through the season. I should not have supposed that this was possible; but facts are stubborn things.

But not all cells are reared in superseding colonies, as we may call them. He has other stocks that he prepares in this way: A colony is made queenless and broodless. At the same time, he begins gentle feeding for the purpose of stimulating. A batch of Doolittle cell-cups, with grafted larvæ, after the lapse of two or three days is then put in, when, presto! they begin work with a hearty good will; but such colonies can not be used for rearing more than about two batches of cells, says Mr. Wardell; and, all things considered, he prefers colonies with queens to be superseded.

DEATH OF MILES MORTON.

IN my last trip to the East I had intended to stop off, either going or coming, at Groton, N. Y., where Miles Morton lived—a man who, probably, has had more experience with fences than any person now living, and from whom, in fact, I had gained nearly all my inspiration and knowledge of fences in general. After one year's experience with them ourselves, and after having looked over letters from all quarters of the country, some of them suggesting slight improvements, I had hoped that I might have a further talk with our friend, and thus, if possible, bring the fence nearer to perfection than it was during the season of 1898; but at the very time I expected to make my call at Groton, August 30, I was taken sick, as I have explained in another column, and therefore wrote Mr. Morton, stating that I should, perhaps, have to call a month later. A day or so afterward I received the following sad note, which I place before our readers:

Dear Friend—It is with a sad heart I write, for I have to tell you that our dear friend and brother, Miles Morton, passed over to join the "great majority" on Sept. 1st. He anxiously looked for your coming as you wrote, Aug. 30th and 31st, and we very much regret your not coming. Relatives, friends, bee-keepers, and the whole community have met with an irreparable loss. His health had been very poor all the season, but he had been able to direct the general method of caring for our bees, and had many little kinks looked up to show you when you came. I will try to get some of them on paper for you when a leisure moment comes in; but it's a case of hustle with me just now, getting crates made, polishing sections, getting honey off, etc. Then Dr. Mason wants me to write something for the convention, and I haven't had time nor steady head enough for a month past to try it.

S. A. NIVER.

Groton, N. Y., Sept. 6.

Mr. Niver, his brother-in-law, had written me that Mr. Morton was quite poorly, but I had no idea he was near the point of death; and I judge that even his immediate friends and relatives did not think the golden chain would be broken quite so soon.



MILES MORTON.

Mr. Morton was one of the keenest, brightest bee-keepers in New York. He was a fine mechanic of the Dr. Tinker order; and back of his beautiful home he had a nicely equipped little shop where he loved to tinker, and make things for his bee-keeping friends. He was a natural born mechanic, as could be easily seen from the exact workmanship and beautiful finish of all he did; and bee-keepers for miles around used to go to Mr. Morton for their supplies.

I have traveled pretty well around that section of country, and everywhere Mr. Morton was spoken of in the highest terms, not only as a successful bee-keeper, but as one who made the best supplies in the world.

Well, it was this same Morton who has been using fences for the last twelve years, and in his quiet way has been supplying his friends and neighbors, not only with fences, but with everything else in the line of bee-keepers' supplies.

It will be remembered that I gave a view of his portable house-apiary—a sort of building that can be knocked down, laid on an ordinary wagon in the flat, moved to another location, and set up for the bees again. A view of this house-apiary is given on page 807, 1897; and that our friends may recall what manner of man he was, I take pleasure in presenting to you a picture which we gave in these columns nearly a year ago. Many of our friends will remember him as being at the Buffalo convention. It was Niver at this convention who told me that I must come and see his brother-in-law. He would not take no for an answer—I had just *got* to go. Mr. Morton mildly expressed his request, but was not quite so emphatic as his brother-in-law, who insisted that Morton could show me many valuable kinks in bee-keeping. Our own columns of the last year or so proved the correctness of Mr. Niver's opinion.



While passing through Gardiner Canyon on my wheel, away up on the pinnacle of a rock I saw a huge bird standing. From the pieces of sticks that projected from the point of the rock I guessed the bird had a nest there, and surmised it might be an American eagle. I was afterward told that it was Eagle Nest Rock, and that the eagle raises one or more broods there every season regularly. We give a cut of it below.



EAGLE NEST ROCK, GARDINER CANYON.

Some of the cliffs near this rock are fully 1500 feet above the roadway—more than a quarter of a mile straight up. Just before reaching Mammoth Springs, in the twilight I saw a great white mountain. Yes, it was

almost ghostly white; and then I heard a rush of many waters. Said I to myself, "Is it possible that these springs have built up such a hill as that?" And no wonder; for it is from 1000 to 1200 feet high, and covers acres in extent. We know this mountain was built up by the hot springs, because close by the hotel there is a pillar called Liberty Cap. This is 52 feet high and 20 feet in diameter, and in the top there is an orifice through which the water used to boil out. There is something exceedingly funny about the way the water builds up these structures. In this special locality near the Mammoth Hot Springs the deposition is principally carbonate of lime; and where the spring happens to run just fast enough, and not too fast to favor building up a mound, the deposit under the most favorable circumstances will be a sixteenth of an inch in four days. You see, if the water came in faster it would break through and run down into the river; if it comes just fast enough and no more, it builds up straight like Liberty Cap. We give you a view on next page illustrating the way in which Minerva Terrace and other terraces were built up.

The hot water, charged with the carbonate of lime, evidently, ages ago, came out down by the river. Then when it ran over the sides of the basin, the mineral was deposited, raising the walls. This made it flow over at some other point until this point was raised in a like manner, and so it kept working clear around on all sides of the pool. Sometimes, however, when the flow was sufficiently large, it would flow through in one spot until it formed another pool lower down. The gradual tendency was to keep on raising the walls and making the surface of the spring move

gradually up. In some places this deposition is soft, so it shows your foot-prints. In others it is as hard as flint. Sometimes there will be a beautiful fretwork something like coral that looks as if it would be crushed if you touch it. To your surprise, however, you find it bears your weight without yielding even enough to show where you set your foot. Now, remember we have these beautiful spots carved by Nature's continual toil. They are very pretty indeed. When formed of salts of lime they are snow-white. No egg-shell ever equaled in whiteness and delicacy this handiwork. But Nature evidently seems to say, "Now, this is not enough to please the children of men, and so I will show them some of my skill in coloring." A great deal of this coloring is of yellowish tint resembling sulphur; but occasionally it shades off into the most brilliant orange. Then we have all shades of purple and blue. But this is not all. The water, which is almost as transparent as the air on a clear

day, is often tinged with the most brilliant hues, and hence the names, Turquoise Pool, Prismatic Lake, etc. A great many of the places are named on account of the tints; for instance, Orange Geyser, Angel Terrace, etc.

Well, that is not all. As the waters flow from the spring and get cooled off, a sort of vegetation begins to line the bottom and sides of the rivulet. This is a sort of algæ, and it looks like flowing hair (or "silken tresses" if you choose) more than a plant. And these algæ also show brilliant shades of green. As the ripples move through these tresses in the colored water, with the carved and colored walls lining each side of the rivulet, it seems like a fairy tale or a creation from the Arabian Nights.



MINERVA TERRACE.

Perhaps you have gathered already that I am greatly in love with babbling brooks. Well, here I was treated to visions of babbling brooks such as I never dreamed of before. Suppose the hot water starts to run off down to the river from one of these boiling hot springs. As it cools off it drops the minerals all along the way, and it drops rather more on the edges of the stream than anywhere else, because the edges are thinner, and are cooled by striking the comparatively cool wall. Well, this gradually builds up so as to make a little rise, as it were. The stream starts out from the spring with the bottom and sides of the brook of snowy whiteness. As they get cooler it begins to take on a shade of brilliant yellow; then orange further down stream, then red. Now the algæ commence to grow with a brilliant shade of green; and sometimes an obstruction forces the little brook to overflow on one side; then we have a little branch with all the same variations and colors.

A man at Mammoth Hot Springs carried the hot water in a little ditch over to his garden where he has a greenhouse. I followed the ditch quite a distance, noting the colors and admiring it, but I did not notice where it terminated in the greenhouse; but I was told about it several days after I had passed by. Now, imagine acres and acres of terraces like the one I have described, and you will have a pretty good idea of Mammoth Springs. It

takes pretty nearly half a day to look them all over.

Oh, yes! there is one thing more that makes the visitor utter exclamations of delight. You can look down into the bottom of some of these larger springs, and see, through the transparent water, the most gorgeous structures. Away down you look, as if into the bottom of a deep well. As water is very deceptive when you look down at an angle, I judged that in some places you could see straight down into the water fully fifty feet.

Great stalactites and stalagmites form marble pillars like those in Mammoth Cave; and many times you can look off in caverns showing that the ground above these boiling lakes is so thin it seems as if it would break through. In fact, there are places that have been labeled by the government, "*Dangerous.*" No stock or horses are allowed to go near these springs, because they might break through this thin crust. My impression is they are great subterranean lakes of boiling water. The roof is supported by arches and pillars. Now, this is not my imagination, because at the Devil's Kitchen, where the water is not now flowing, you can go down through an opening only a few feet across, by means of a very long ladder. I went down and down until it was so hot, and smelled so strongly of sulphur, that I began to think of getting back. But as I saw foot-tracks up on either side along the bottom, I concluded it would be safe

to go where other people had. But I made my investigations rather hurriedly, and was very glad indeed to get a breath of fresh air when I got out. Down in this cave are wonderful forms of carving, the result of the hot-water currents, I presume. Angel Terrace is so named on account of the great delicacy, not only of the carving (if that is the right word), but on account of the rich coloring.

These hot springs sometimes cease to act, as in the case of the Devil's Kitchen, and then, again, they break forth with a sort of eruption in unexpected places. Narrow Gauge Terrace is a place where the flat rock seems to have been lifted up so as to form a ridge like the roof of a house. The hot water comes out all along the ridgepole, and this ridgepole is about 300 feet long. The water runs down the roof of the house, as it were, and is colored with a most brilliant coloring.

Near Narrow Gauge Terrace is what is called the White Elephant Terrace. A hot spring is in the middle of the back of said elephant. It runs over and down the sides, and then actually runs down and out of sight between what might be called the elephant's legs. One is tempted to call the spring stupid, because it goes away up to the top of the elephant's back before it gets out. Now, this white elephant illustrates vividly the way in which the hot springs operate. Very likely the water comes up through one or more openings in the ele-

phant's legs. It built up the legs first, then ran over and solidified until the legs were united, and the streams of water also united, and in the same way produced the body, back, and head of the elephant. Now, the queer thing about it is that, after having formed the elephant, the water runs down, as I have said, along the legs, and disappears in a cavity that goes away down in the ground. Why does not the spring get out down in the ground without the circumlocation of going up on the top of the elephant's back, running over, and then getting away? It is because of this wonderful deposition of minerals. In some places it made me think of the tallow candles of my childhood. Some of the older friends, at least, will remember how a neglected candle would sometimes pile up strange figures, caused by the melting tallow running over the sides slowly, then getting cold.



GOLDEN GATE.

You can go all around and look at things, but you are not allowed to break off fragments to carry away, nor can you throw sticks and stones into the springs. Just try it, and see how quickly you will get the police on your track. I was overhauled by a policeman only once. He told me to be very careful about frightening horses, especially where the roadway was cut into the sides of the mountain. He suggested I had better dismount and go on foot around such dangerous places.

Away up in the mountain there is a spring so large that it is called Bath Lake; but the water comes into it so slowly that it is just about the right temperature for a bath, and a notice is put up permitting boys to go in swimming after seven at night, but at no other time.

Near Mammoth Hot Springs is Fort Yellow-

stone, where the superintendent of police resides. The road on from Mammoth Hot Springs is not very difficult for the wheel; and no wonder; for one piece of it, scarcely a mile in length, cost the government \$14,000. But there are wonderful sights all along this mile. We gave you a glimpse of it.

Much of the roadway here is made of plank, with one side let into the cliff, as you will see in the cut. A good iron railing prevents people from falling over. Some of the cliffs here go straight up so far skyward that one is tempted to stop every rod and gaze in open-mouth wonder. Just at the point you see in the picture, I found some government employees working on the road; and as I had climbed nearly a thousand feet that forenoon I very much enjoyed a dipperful of water in a pail they carried along with them. A little further on, feeling weary, as it was time for my forenoon nap, I wheeled out into a clump of beautiful evergreens, and lay down on the soft green grass, my head resting on the handle-bars of my wheel where my coat was tied, and had a very refreshing nap. At dinner-time I reached Willow Park, getting my first glimpse of one of Wylie's camps with its permanent tents, and with me it was a case of "love at first sight." I give you a picture of one of the tents, but it does not half do justice to any one of the camps.

Just imagine a group of tents so arranged as to form a little village, with the ground tramped down hard and smooth, and the whole village swept up neat and clean. Then imagine, inside of each tent, a nice clean dainty bed, with carpeted floors, clean towels, wash-bowl and pitcher, and every thing to match. If it is dinner-time you would have to imagine also a larger tent with the long table well filled. Do not forget an abundance of easy camp-chairs, with magazines, books, and papers, and last, but not least by any means, the whole little village peopled with bright intelligent folks, old and young. The path was down hill leading to the camp, so I came in on my wheel at a pretty good speed; but as I sprang off I uttered an exclamation of surprise and delight. A nice-looking gentleman responded courteously, and I talked with him quite a little while before I discovered I had tackled Mr. Wylie, the boss (not only of this camp, but of ever so many others like it), the very first thing. In a little time I had another nap in one of those beautiful tents, and had a nice dinner of trout just caught out of the lake near by. Then I went out into the open woods you see in the picture, and picked wild strawberries. They were just getting ripe about the first of August; and at the end of a path through the beautiful spruce and pine trees in a shaded little nook I found the Apollinaris Spring. The water is said to be almost identical with that found in the celebrated spring in Germany; and I am told it is the only one besides the German spring on the face of the earth. Somebody said a

syndicate had offered Uncle Sam more than a million of dollars just for this spring alone; but Uncle Sam replied, "No, no, boys; you can not have that spring, nor any thing else in Yellowstone Park, to speculate on and make money out of. This whole domain is to be kept just as God made it, as nearly as we can. You can drink all the water you choose, or carry it away in bottles for your own use; but no speculating. You Yankees may trade and barter all you please anywhere else in the whole United States; but this little 'garden-patch' is for the *people*. Every child of our country may come here, help himself, and enjoy these things, without money and without price; but they are not to be sold or *peddled* out."



ONE OF THE WYLIE TENTS.

I suppose, friends, some of you remember that I almost always have some sad experience with drinking-water when out on my trips. Well, some kind friend informed me that everybody could drink just as much as he could "hold" of the water from this spring, at all times and under all occasions, and it would not and really could not hurt him a bit. If he were dyspeptic, or had other troubles, it would just do him good—that is all. And so I drank. Now, that water is exceedingly delicious. It has a sort of tart twang to it that just hits the spot exactly. Like the melon-tree of Bermuda it seemed to "fill a long-felt want." There was not any kind of cup to drink out of. My good friend Wylie says he can not keep a cup there, anyhow he can fix it. All sorts of tourists are visiting the springs continually, every day, and even after dark, and they will carry off every thing in the shape of a drinking-cup. I was going to propose making him a low offer of a gross of our cheap tin cups; but I was discouraged when I thought of the expense it would involve to get them there. So I bent up a sort of drinking-cup from the bottom of a tin can.

After I had got it fixed I kept testing it to see how it would work; and as I could not tell just how much it held, I did not know how much water I drank. The next day I concluded "*too much* of a good thing is worse than none;" but I will tell you more about that later on.

Did I tell you that it freezes a little almost every night in Yellowstone Park? Well, it does; and after the sun went down I got on my overcoat and put a big silk handkerchief in my bicycle cap, but I was chilly even then, and began to wonder if I should not have to go to bed just because I could not keep warm as other people do. When I first got into camp I noticed there were some benches set in the center of the village, in the form of a square; but I did *not* notice some blackened sticks in the center of this little square. Just as I was beginning to feel a little "blue" with cold, one of the men started a fire; and when I planted myself in one of those exceedingly easy camp-chairs, in just a few minutes I was "so comfortable;" and some of the ladies came out of the different tents and sat down; others dropped in, including the people who did the work, and by and by we had quite a family circle. Well, right in the midst of our merriment a strange and unnatural voice issued from the doorway of one of the tents. It was a phonograph. One of the tourists had brought it along, and he manipulated it so as to give us a first-class city entertainment. When the crowd encored, of course he had to repeat; and, didn't we have fun that evening? I enjoyed myself so much that I then and there declared I would have a tent like one of the Wylie tents, in our dooryard, and then I would have a campfire around which we could sit on frosty nights, and enjoy the frosty air while the campfire would keep us warm.

THE OHIO STATE FAIR, AT COLUMBUS.

On the morning of Sept. 2d, just about as the sun was rising, it came into my head that I ought to visit, at least briefly, our State Fair. There were several obstacles in the way. First, John was in Canada, and Ernest was somewhere in York State, and they had left me in charge of the ranch. Second, it was the last day of the fair. It must be now or never. Third, there were no trains running so I could get there and back that night. But there was a train on the Big Four that would reach Wellington, 20 miles west of here, at 8:55, and it was after 6 o'clock already, and I had not had my breakfast. I got the latter, however, in double-quick time, grabbed the Columbia chainless that doesn't need any oiling nor any thing else; and I made my 20 miles in an hour and three-quarters.

In one respect, at least, and a very important one, our State Fair was a success. No drinks were for sale on the grounds, and, thanks to the Anti-saloon League, none

around the outside of the fence—at least I did not discover any, and I was rejoiced to find no gambling-devices or low-lived side shows, nor any thing objectionable in that line. There was a very large attendance of wide-awake farmers and everybody else interested in any branch of agriculture. The various churches and the W. C. T. U. furnished excellent lunches and refreshments; and last, but not least, the honey display, both comb and extracted, was about as nice as I ever saw at any State fair. Whom do you suppose I found in front of one of the neatest-looking honey-stands? Why, it was our old friend Mrs. Jennie Culp (now Mrs. Williamson). She has been out west for several years; but she found her bees had not been sold in her absence, and so she is back in Ohio keeping bees again, and selling honey.

Mr. and Mrs. Goodrich, a very nice-looking couple, were presiding at an adjoining stand; and Dr. Besse, and some others whose names I do not recall, were near by. I was a little surprised to see at least half a dozen excellent exhibits after such a poor season. But the Ohio bee-keepers, at least, do not propose to be snowed under, even if we have had one season that is almost an entire failure.



In our last issue I told you we were having a conflict here in our town in regard to the matter of saloons or no saloons. I mentioned, too, a certain petition that had been circulated. This petition was put to the council, asking them to call for a new vote in regard to the matter of opening saloons here. When I learned that a good many of our helpers had signed this petition I made an appeal to them, which I have thought best to submit to the readers of GLEANINGS.

A LITTLE TALK FROM A. I. ROOT TO OUR EMPLOYEES IN REGARD TO THE TEMPERANCE ISSUE NOW PENDING.

I hardly need say any thing to the older ones in our establishment in regard to the stand that I have always taken here in Medina in regard to temperance matters. I have thought, however, it might be well for me to state my views a little more clearly in regard to having open saloons here. First, let me say I want all of our boys, old and young, to be *men* in the best sense of the term, and by all means to have opinions of their own. During our last presidential election it was reported I was going to turn off every man in my employ unless he would vote for McKinley. Later on it was reported by people on the other side of the fence that I was going to turn off all who *would* vote for him. To correct such unreasonable statements I put up a notice over the time-desk, something as follows:

"Vote for whom you please, but don't talk about it during working hours, please."

I hope the people who have known me all my life, especially around home, would know that that would be my stand. But saloon or no saloon here in our town of Medina is a little different matter from the one I mentioned regarding politics. In regard to this question I would still say, vote as you please; or I would a little rather put it, vote according to the dictates of your own conscience. If you can vote for an open saloon in Medina, and ask God to bless you in so doing, by all means vote that way. But let me ask of you not to get *all* your information as to the great money-producing power of the saloon from the saloon-men themselves, for they have an ax to grind, and that ax is yourself.

In the *Medina Gazette* recently there was a thought that I wish most earnestly to commend to all. It was something like this: "Let there be no intemperate discussion in discussing temperance in our town." And now may God help *me* to be temperate in my hostility to the saloon business.

VOTE ACCORDING TO YOUR CONSCIENCE.

Now, boys, if I were going to vote for open saloons I do not believe I would work any longer for The A. I. Root Co.* Now, hold on. Do not say I said you would be turned off. We never turned a man off because he was a Democrat, Republican, or Prohibitionist; and I do not suppose we would think of turning a man off, even if he voted for an open saloon. That is not our way of doing business. When we are discussing as to what hands to keep and whom to let go during the dull season, the first question among our board of managers is, "Does this man do his work well, and is he always on hand?" If the answer comes in the affirmative, he is not likely to get turned off, even if he does sometimes frequent saloons.† By the way, several of the large railway companies have recently put up rules to the effect that they would discharge any of their men who might be seen even going into or out of a saloon. Now, that is going further than your old friend A. I. Root ever thought of going. Years ago he did bear down pretty hard on the tobacco habit. But if it was an error it was in a good cause. I do not know what you think about it; but some of your wives, sisters, and moth-

*Perhaps a little further explanation should be made here. An open saloon can do more harm in a few hours, especially if those hours are after dark, than all the ministers, all the schools, all the Endeavor societies, and every thing else of a like nature, can cure in weeks or months, or perhaps years. A boy may be started to ruin in one night in the saloon, and his start may be such that all the efforts that can be made through his natural life will be unavailing. Now, when you know a man is spending his life and means in keeping saloons *out* of his native town, if you deliberately propose to work against him, and undo his lifework faster than he can build it up, I submit that ordinary consistency, or a very small degree of manliness, should stand in the way of your even asking him to give you work.

†Permit me to say, however, it is very seldom indeed that we find such a man as the above. He may be so for a time, but he must either give up his habits or else he will very soon come to be very unreliable.

ers still think he had it just about right. Now, a man who attends to his work promptly may do what he pleases—that is, within the bounds of reason—out of working hours; but, other things being equal, we shall give the preference to the man who does not frequent saloons. This is only business common sense. Another thing: In discussing what hands we shall keep and which ones we shall let go, we often give the preference to the boys who are having hard work to get money to gain an education; and such a boy *never* frequents saloons; and I do not think he ever votes for open saloons. I tell you, friends, there is a vast difference between the boy who is working hard to get through college, and the one who proposes to use his earnings for beer and tobacco.

THE MEN IN THE ANTI-SALOON LEAGUE.

Perhaps not all of you are aware that I am one of the directors of the Ohio Anti-saloon League. The motto of this League is, "The Saloon Must Go." I have spent not only a considerable amount of time but comparatively large sums of money in supporting the Ohio Anti-saloon League, and I have rejoiced in the opportunity it gave me of meeting with the very best and most intelligent educated men and women in Ohio. By the way, boys, what kind of people do you suppose I meet in the Anti-saloon League? Well, we have our foremost and best ministers of the gospel, from all denominations. Then we have our college professors, the best and brightest in the State. We have among our number, in fact, the men who compile the school text-books that the children of the United States are now studying. We have men who are giving their lives that our Ohio boys may grow up pure and good, and honest and true.

Now, there is another league in Ohio. This league has more men and more money than we have.* It is the Ohio *Liquor* League. The purpose of its members is to build up the trade in intoxicating liquors; to get open saloons into every city, village, town, and four corners, if they can, in our State. What sort of men do you suppose meet together in this league? Any college professors? any ministers of the gospel? any who love righteousness and hate iniquity? Not one, I fear.

IS IT TRUE THAT MORE LIQUOR IS NOW SOLD IN THE TOWN OF MEDINA THAN WHEN WE HAD OPEN SALOONS?

Some say there has been more liquor sold in Medina during the past twelve years than in the same period when we had open saloons. I have wondered sometimes whether anybody *believed* this, even when he said it. I am not around town very much, but I have frequently heard strangers complain bitterly because they could not get a drink anywhere here for either love or money. The man who was sent here to put up our big press declared he had gone all over town, tried his best to get inside of "the ring," but could not get a drop. He finally sent out into the country and got a jug

of home-made wine; and before I knew it he was passing it around among our boys until I stopped it. Perhaps I had better tell you a little more.

Our Anti-saloon League sent a detective to Medina, and he spent two or three days trying in *vain* to get a drink. I heard him say he thought Medina people ought to be pretty well satisfied with the pressure they had brought to bear on the liquor-trade. He mentioned other towns all around us, some of them dry, where he got as many drinks as he could pay for, without any trouble whatever. Now, does any one believe it is true that no good whatever has been done in our town by not only keeping down all signs, but making liquor-venders work with such extreme caution?

WHY THIS CLAMOR FOR OPEN SALOONS?

Right here comes in another point, and please do not try to dodge it, dear friends: Not a word (at least to my knowledge) was said about an open saloon until our Ohio League, with the hearty co-operation of the town officials, had got two of our liquor-men into a corner. Now, why should all of this sudden clamor for an open saloon start up at just the very time we had succeeded, after months of hard work and lots of expense, in getting these fellows into this fix? The principal excuse I have heard offered, by those who vote for an open saloon, is that it would be better, "in the present state of affairs." Why, what do you mean, friends? The present state of affairs is *tiptop*. Any one who is really "temperance" at heart should swing his hat, for it looks as though we were going to have the banner town of the State, so far as suppressing intemperance is concerned.

SALOON-TAX MONEY AND PAVED STREETS.

Another argument (and a good many consider it the strongest one) is that a saloon would pay quite a little money to the town, that we could have for improvements. Somebody said in my hearing, the liquor business of Medina would give the town \$1000 every year, for paving streets, electric lights, etc. If we had *enough* saloons here, and they all paid the tax, perhaps it would. Here are the actual facts: An open saloon would be compelled to pay every year \$350 Dow tax, and not one cent more. One-half of this amount would go to the municipality, and the balance to the State and county. I doubt very much whether more than one saloon could pay this tax. We should, therefore, as a village, get as the price for an open saloon not more than \$175* a year. This would be more than offset by added crime, poverty, and bad debts to the business man, because the money has been paid to the saloon. At Bellefontaine, Ohio, crime increased 60 per cent within six months after the saloons returned, according to the mayor's statement, and that is about the way it runs in other towns.

"SPEAK-EASIES" IN MEDINA, AND THE SALOONS IN WADSWORTH.

Here is another thing to consider: If Medi-

* But *God* and *right* are on our side, and so we do not fear.

* I would rather pay this amount myself than to have an open saloon.

na starts open saloons it will be a general signal for the rest of the county to follow suit, for the county-seat ought to lead. Shall we not rather make Medina *County* dry as a whole? Most of you know what the effect of open saloons has been in our neighboring town of Wadsworth. A short time ago one of Wadsworth's old and respected citizens was held up and robbed by two men almost in broad daylight, and almost in the heart of the town. He yelled lustily for help; but, although people were all around within hearing distance, nobody paid any attention to him. Did you notice the excuse the papers gave for his not being heard and receiving help? Why, they said there were so many drunken brawls going on almost constantly at every hour of the day that nobody paid any attention to his "yelling." They took it as a matter of course. And this is not a solitary instance by any means of similar troubles in and around Wadsworth. Have we had any such goings-on as this here in Medina during the last twelve years?

THE TREATING HABIT.

But this is not all. One of the greatest evils attendant upon the open saloon is the treating habit. A young man steps up to the bar, and invites all to drink to his health. After all the rest in the room have "returned the compliment" they have had anywhere from three to ten drinks apiece. It is this treating that makes *drunkards*. If people *will* have liquor, let them have it in their *homes*. It is not the beer-keg in the family cellar, but the *open saloon* that is a curse to any town.

A LEGALIZED SALOON.

My story is getting rather long, dear friends; but there is one thing more I must speak of. An open saloon is legalized by law. The saloon-keeper is thus made *respectable*. He can stand out in front of his shop, and hold up his head; and you, boys, *make* him respectable by your votes. During the past twelve years the liquor-vender has been rather looked down upon. He is a criminal here in the eye of the law. May be he got along without punishment; but, nevertheless, he has been rather kept under—at least, if he ever had to own up how he got his money.

HOW THE SALOON IS RUN IN CITIES.

I have suspected that a good many boys in Medina know very little about how the open saloon is run in cities. Let me give you a little inside view. The following is an extract from the August number of the *American Issue*:

Rev. Gilbert J. Raynor, district superintendent of the Toledo district of the Ohio Anti-saloon League, some four weeks since, at the request of some citizens of Columbus, came to this city in the capacity of a detective. He caused to be inserted in a morning and evening paper an advertisement asking any one having a saloon for sale to address him (giving certain initials) at the newspaper offices. There was at once a liberal response on the part of those having "wet" goods for sale. Mr. Raynor, armed with these letters, and being a possible purchaser, had easy access to the saloon-keeper's books, and no trouble to tap the fountains of information as to the secret methods of conducting the saloon, gambling, and brothel business in the city of Columbus. He found that absolutely no legal restraint at all was being insisted upon by the

city government. Gambling of all kinds was carried on unmolested, by the knowledge and consent of the police. In fact, he was given to understand that these law-breakers regarded the police as their best friends, and in return for their kindness they give the police their drinks and cigars free. In one instance he followed a policeman into a saloon, who ordered a drink, and, when the bartender set him out the whisky and the usual small glass to drink out of, the policeman, in contempt for the little glass, said: "Give me something to drink out of." Then turning to Mr. Raynor, said, "You might as well have what you want when you don't have to pay for it." Whereupon the bartender gave him a large ale-glass which he emptied, then called for a half-pint, put it into his pocket, and walked out without even offering to pay for it. In every instance he found the Sunday sales in the saloons to be much larger than the week-day sales, usually more than double, and in some cases trebled. When asked how they secured immunity from prosecution for these violations of law they said they paid their money to the liquor-league, and things were "fixed up at headquarters." When asked what they did if a patrolman interfered with them, they simply said they reported him to "headquarters." The unanimity with which they all assured him that things were "fixed up at headquarters" was very striking. Having gained what information he could on these and other points, he sent for his "partner" to come, who, when he arrived, accompanied him on his rounds and received the same information direct from the saloon-keepers.

We then called together the pastors of the city in a meeting at the Y. M. C. A. to hear a report from Mr. Raynor. Mayor Black, the police, and county prosecutors were invited to be present, but neither of them availed himself of the privilege. The police prosecutor did send a letter stating that his official duties made it impossible for him to be present. The county prosecutor was out of the city, and Mayor Black ignored the invitation. Mr. Raynor gave a detailed account of his findings at this meeting, a part of which was published in the papers of the city. This so incensed the officials that Chief Kelly swore out a warrant for Mr. Raynor's arrest for criminal libel. He was arrested at the Anti-saloon headquarters in the Wesley Block, put aboard the patrol wagon, and rushed to the police station, the driver sounding his going to attract attention. Once at the station house he was s. arched and thrust into a damp back cell as if he had just murdered somebody, and was a most desperate and hardened criminal. In due time bail in abundance appeared, and he was released on a \$400 bond. One feature of the searching part of the program at the police court is especially worthy of notice. With scrupulous care they relieved him of all his papers, but left him in possession of his pocket-knife, the only thing about him of the semblance of a weapon that might be used to commit murder or suicide, and the very first thing that would have been taken from any one else—the object being to find some papers upon his person that might incriminate him. They extracted from among his papers brief notes he had used when delivering his address to the pastors at the Y. M. C. A., also some of the letters he had received from the saloon-keepers. This they doubtless had a right to do; but after he was released, the papers—minus those mentioned above—were returned with the assurance that these were all that had been taken, and he was asked to sign his name to a statement in a book kept for that purpose, that he had received every thing, under penalty of receiving none if he refused. His watch and money were finally returned to him, but his papers are still in possession of the police.

ACETYLENE GAS FOR ILLUMINATING.

This to Uncle Amos. Although I never met him I am well acquainted with him. We have a Star generator in our house; have used it since last fall. It stands all winter within a few feet of the stove, and I think an accident could hardly happen. We could not be better pleased with the light. It is but little trouble, and always ready to light, and is beautiful when burning. We have two makes of hand-lamps. They are nice, but more trouble and expense to run than the generator.

Newman, Ill.

M. A. SMITH.



GARDENING FOR THE MIDDLE OF SEPTEMBER.

There is always a peculiar charm, to me at least, in seeing things grow when the weather begins to get cool. Many plants make a more luxuriant growth through September and October than in any other month in the year; and I would especially advise that all growing crops be kept clean. In fact, we are just now cultivating our late potatoes where a horse can get through them, and getting out the weeds and mellowing the ground with a hoe where a horse can *not* get through.

If you are going to grow cold-frame cabbage-plants, now is the time to sow the seed in the open ground, for plants to be put under glass when they are big enough to transplant; the same with the Grand Rapids lettuce; and if you are going to grow lettuce in the greenhouse, I would by all means advise you to sow the seed in very rich ground outside, and grow your young plants where you can have plenty of room in the open air. Do not put them under glass until the weather obliges you to give them protection.

Almost all kinds of onion-sets will succeed more or less if put out now in good rich soil. American Pearl and Winter onion, mentioned elsewhere, are planted at this season more than most other kinds.

Keep your parsnips and carrots clean, and make them grow during the cool weather.

Spinach to be wintered over should go in at once. We have just had one single order for 60 lbs. of seed. It is quite a trade to learn to manage spinach so as to have it winter safely in the open air; and different localities require different management. Either practice on a small scale until you get the hang of it, or visit some market-gardener, and see how he manages to make it a success.

Cultivate and hoe your turnips, if you want them to do their best; and by all means cultivate and hoe your strawberry-patch, and see them just "climb" during cool weather when the fall rains come on. After you learn how, you can put out strawberry-plants right along till the ground freezes, and succeed almost every time. Try a few till you get the knack of it, and then you can smile when you hear people talk about "strawberries put out in the fall are no good."

Now keep your things looking nice, even if everybody else does let his garden grow up to weeds. Make your own a refreshing contrast to the surrounding neighborhood. Why, I believe I enjoy making a garden in the fall more than in any other season of the year.

BENSON'S RENOVATOR COW PEA, ONCE MORE.

About the first of September I noticed a single plant among these cow peas, covered with pods. In fact, I counted about three dozen on a single plant, and half a dozen of the pods were mature and dry. This is remarkable,

for they were planted only about the middle of June, and we have always supposed the regular cow pea would not mature as far north as this. The plant that had these early pods on, of course did not have the mass of foliage of the rest of the crop which is just coming into bloom. I mailed some of the ripe peas to Mr. Benson, the originator, and here is his reply:

Friend Root:—The sample of pea shows the true type of the Renovator, though it might be well to save them separate, as I find frequent sports, generally cream or black in color. It makes me feel good to get your report; for if your peas are blooming they will mature. The crop comes on almost at once, and matures surprisingly fast. My peas are just blooming. One peculiar feature I forgot to mention in my circular is that the early-planted peas and those planted late begin to bloom at the same time. The peas I planted May 1st are no further on than those planted July 1st, except an occasional plant, as the one noticed with you. They will mature in three months only when planted late. The early peas continue to grow. They seem to know the proper time to bloom. I have some which came up August 1, which show bloom-buds. I have a piece of thin land, planted early, six feet apart, one plant in a hill. The whole plot is now a mass of vines three feet deep, not only adding nitrogen to the soil, but dense shade, drawing fertility from below. I also have a piece which is a fine stand, from volunteer plants, seed of which lay in ground all winter. No other pea will do this. Pick your peas off, and leave the vines on the ground till spring, then turn under and note improvement. To obtain the greatest amount of nitrogen, I suppose they ought to be turned under when in bloom. I started on one of the worst old red-hill farms in Illinois which no one else would buy, and the Renovator pea has been a Godsend to me. It is all and more than I claim it to be, as grown here, and I am confident it will be worth millions to the farmers of the United States and Canada. No matter if it never matures a pea; if not, even then it will be invaluable for hay, and to restore old soils.

I am getting to prefer cow-pea hay to any other feed for horses and cattle.

M. BENSON.

Dongola, Ill., Sept. 3.

Our friends will understand, from reading the above, that it evidently was not intended for print; notwithstanding, I have chosen to use it. Perhaps we should allow something for the enthusiasm of the introducer of a new plant; but of this I am satisfied: That this cow pea will produce a greater mass of feed, or material to plow under, than almost any thing else we have. I have not tried the vines for feed, for I hardly want to spare any just yet. In regard to the seed lying in the ground over winter, and then germinating, the *Practical Farmer* for Sept. 10 has the following in answer to an inquiry:

Our friend might try the same experiment for many years without having the same result, and the experience of all who grow the cow pea is that success can not be insured if the seed is sown too early in the spring, notwithstanding we always have more or less of volunteers. It is well known all over the South that some varieties of the cow pea, and particularly the black, will at times lie over winter and volunteer in the spring.

THE BLISS TRIUMPH POTATOES; A REPORT FROM THEM.

Friend Root:—I send by mail two potatoes to you of the Bliss Triumphs, which you sent me last April. The potatoes were spread out in a light room (*a la Green*), and kept there till the 2d of May, when they were treated with the corrosive-sublimate solution, and planted, making 66 days at the time they were dug. This is the most remarkable growth I have ever noticed in such a short time.

Early Ohio Boves, and Thoroughbreds in the same field did not do so well.

I see Mr. Green states that treating the potato as

above is a preventive for the scab; but you will notice one of the tubers is slightly affected. They were planted on a fall-plowed sod that had not been in potatoes for more than fifteen years.

Of all the varieties, the Bliss is the only one that is showing any sign of blight; but my neighbor's Early Ohio's, just over the fence, and planted a month earlier, were damaged considerably with it.

The smaller tubers were the 66-day potatoes, and the larger were 90-day ones. I tried spraying with the Bordeaux mixture, but I am inclined to think I mistook the ripening of the vine for the blight.

Lebanon, O., Aug. 22.

DR. JNO. Q. MULFORD.

The samples sent are certainly very fine. The great trouble with the Triumph potato, both in Bermuda and in our own country, is its tendency to blight. But I am under the impression that either a good deal that is called blight is not really so, or that the genuine blight may be prevented by very rich soil and the right way of applying it. Our extra-early Triumphs were the first to die down; but I could not make out exactly whether it was the blight or the dry weather. Our largest piece was planted about the first of July. When I got back from Yellowstone Park I was completely astonished to find patches here and there growing thriftily, without any symptoms of blight whatever. I said first, "We must have got some other potatoes mixed in;" but when I noticed quite an area about the middle of the patch, all bright and thrifty, I was a good deal puzzled. Then I began to investigate the treatment the ground had had the year before; and all at once I caught on to the mystery. On that piece of ground we planted strawberries a year ago last spring. In the fall we were called upon to take care of some hog-pen manure that had to be moved at once; but the ground was rather wet for a team to get on it. I told the men to spread the manure on the dryest portions of the strawberry-patch. So a load was scattered here and there. This spring this manure proved to be so full of timothy seed that it was entirely out of the question to clean it out from among the berries. By the close of picking-time the timothy was knee-high, and just as thick as it could stand—that is, where this rich manure had been scattered. Now, we had such a demand for strawberry-plants last spring that the patch was practically stripped; therefore I decided to plow it all under, and plant potatoes. Now, then, right before my eyes is a remedy for blight—that is, if it really was blight that made the greater part of the field die down and ripen prematurely. A good many writers have recommended, where you wish to manure the ground for growing potatoes, to put the manure on the grass or clover the year before you grow the potatoes. Today, Sept. 5, those Triumphs where we had the manure and timothy are as bright and green as any potatoes we have. Wherever there was no manure or timothy, the vines had died down with a small crop of small potatoes.

ARKANSAS APIARY FOR SALE.

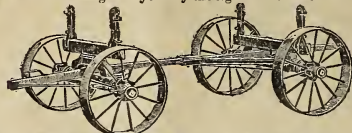
Sixty eight colonies of Italian and hybrid bees in 10-frame hives, with fixtures and honey-crop, at a bargain.

Henry Zeiner, Bertig, Greene Co., Ark.

In writing, mention GLEANINGS.

ONCE IN A LIFE TIME

is often enough to do some things. It is often enough to buy a wagon if you buy the right kind. The



ELECTRIC HANDY WAGON

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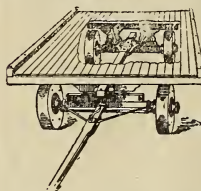
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